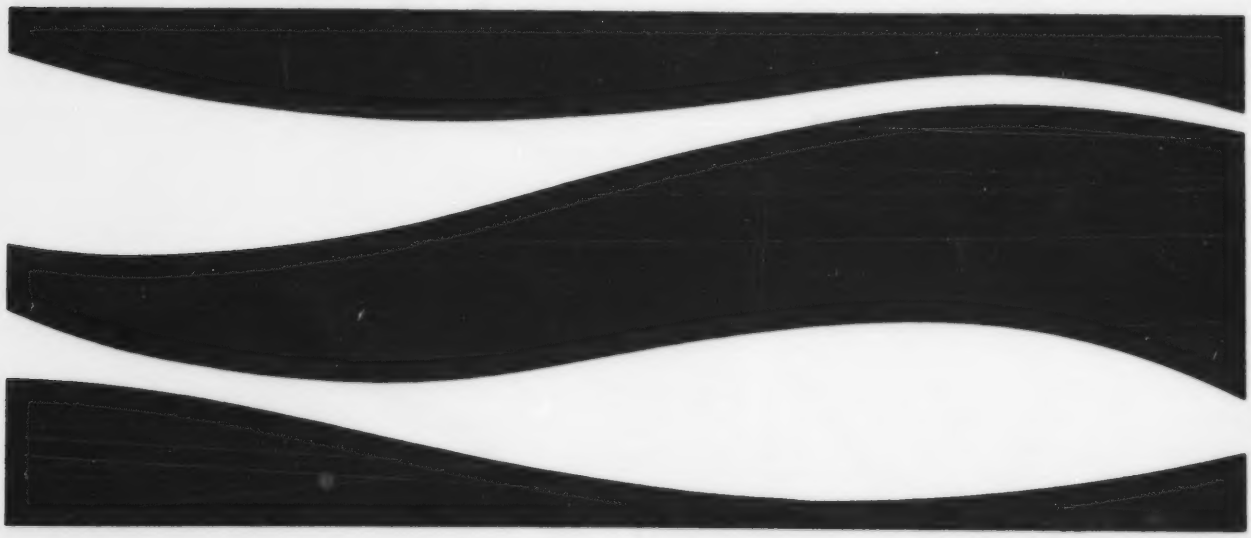
FISHERIES PRODUCTION STATISTICS OF BRITISH COLUMBIA 1989

Province of
British Columbia
Ministry of Agriculture,
Fisheries and Food

AQUACULTURE AND COMMERCIAL FISHERIES BRANCH, COMMERCIAL FISHERIES SECTION



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FOREWARD

This is the ninth annual issue of the Fisheries Production Statistics of British Columbia to be published by the Province of British Columbia. As a result of the transfer of Commercial Fisheries to the Ministry of Agriculture and Fisheries in September of 1986, this issue is the fourth to be published by this Ministry. Prior to the 1981 edition, production statistics were published by the Department of Fisheries and Oceans, Canada dating back to 1951.

This report provides a summary of fish production statistics reported in the 1989 census of fish processing plants licensed in British Columbia. The format is similar to previous years in which the majority of the text and tables are dedicated to fish landings and production. In addition, information relating to licensing within the fishing and fish processing sector as well as aquaculture production and price index are also provided.

It should be noted that all information on fish landings and value is provided by the Department of Fisheries and Oceans. It includes direct vessel exports and estimates of year end bonus payments to fisheremen. The harvest of non-farmed freshwater fish is not included in the report.

All quantity data are presented in tonnes, except where otherwise indicated, and values are shown in thousands of dollars. One tonne equals 2,204.6 pounds or 1,000 kilograms.

We would like to thank the many people in the industry and various agencies of both governments who contributed to this report.

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TABLE OF CONTENTS

		PAGE
I.	Summary of the British Columbia Fishing and Fish Processing Industries - 1989	1
II.	Summary by Species	
	A) Salmon	9
	B) Herring	30
	C) Halibut	32
	D) Groundfish	33
	E) Shellfish	35
	F) Aquaculture Production	36
	1. Salmon	38
	2. Oysters	41
	3. Freshwater Trout	43
	G) Major Species by Product Type	44
III.	Licensing of the B.C. Fishing and Fish Processing Sectors - 1989	55
IV.	Employment in the B.C. Fish Processing Sector . . .	61
V.	Glossary of Terms and Important Notes	64
VI.	Appendix I - Statistical Area Maps, Department of Fisheries and Oceans	66
VII.	Appendix II - Geographic Regions of Fish Processing Facilities in British Columbia	68

LIST OF TABLES

		PAGE
TABLE 1.	Quantity and Value of B.C. Fish Landings by Species - 1989	3
2.	Landed and Wholesale Value of Fish and Fish Products in B.C. 1978 - 1989	5
3.	District Catch by Species - 1989	6
4.	Regional Wholesale Value of B.C. Fisheries Production by Product Category 1988 - 1989 . . .	8
5.	Landings of Salmon by Species and Statistical Area - 1989	11
6.	Landings of Salmon by Species and Gear 1978 - 1989	12
7.	Share of Salmon Landings by Species and Gear - 1989	14
8.	Landed and Wholesale Value of Salmon by Product Type 1978 - 1989	14
9.	Landed and Wholesale Value of Salmon by Species 1978 - 1989	15
10.	Wholesale Value of Salmon by Species 1978 - 1989	17
11.	Production and Utilization of B.C. Salmon by Species 1988 - 1989	18
12.	B.C. Canned Salmon Production by Region - 1989 .	22
13.	Comparison of the 1989 Canned Salmon Pack to the 12 Year Average Pack 1978 - 1989	22
14.	British Columbia Canned Salmon Production: Quantity and Value by Species 1989	23
15.	British Columbia Canned Salmon Pack by Year 1978 - 1989	24
16.	Average Wholesale Price of British Columbia Canned Salmon by Year 1978 - 1989	24
17.	Quantity and Wholesale Value of British Columbia Dressed Salmon Production by Species - 1989 . . .	25

LIST OF TABLES (CONT'D)

PAGE

TABLE 18. Quantity and Wholesale Value of British Columbia Frozen Dressed Salmon Production by Species and Grade - 1989 26

19. Frozen Dressed Salmon Production in B.C. by Year 1978 - 1989 27

20. Average Wholesale Price of Frozen Dressed Salmon by Year 1978 - 1989 27

21. Fresh Dressed Salmon Production in B.C. by Year 1978 - 1989 28

22. Average Wholesale Price of Fresh Dressed Salmon by Year 1978 - 1989 28

23. Quantity and Wholesale Value of British Columbia Hot, Cold and Specialty Smoked Salmon - 1989 . . 29

24. Roe Herring Landings and Wholesale Value of Roe Herring Products 1978 - 1989 31

25. Food and Bait Herring Landings and Wholesale Value of Food and Bait Herring Products 1978 - 1989 31

26. Landings and Wholesale Value of Halibut in B.C. 1978 - 1989 32

27. Comparative Wholesale Values of Major Groundfish Species 1987 -1989 33

28. Joint Venture or Cooperative Sales of Pacific Hake to Foreign Nations by Year 1978 - 1989 . . . 34

29. Comparative Wholesale Values of Major Shellfish Species 1987 - 1989 35

30. Aquaculture Production in British Columbia 1982 - 1989 37

31. British Columbia Salmonid Mariculture Production - 1979 - 1989 39

32. Production and Utilization of Marine Pen-reared (Farmed) Salmon by Species 1989 . . . 40

LIST OF TABLES (CONT'D)

		PAGE
TABLE 33.	British Columbia Oyster Production 1975 - 1989	42
34.	British Columbia Freshwater Trout Farm Production 1979 - 1989	43
35.	Landings and Products Processed in B.C. - 1989	45
36.	Personal Commercial Fishing Licences Issued by the Department of Fisheries and Oceans: by District 1987 - 1989	56
37.	Commercial Fishing Licences Issued by the Department of Fisheries and Oceans: by Fishery and Licence Category 1987 - 1989 . . .	57
38.	Commercial Fishing Licences Issued by the Department of Fisheries and Oceans: Special Fisheries (Z) - Unlimited Entry 1987 - 1989	58
39.	Fish Processing, Fish Buying and Fishermen's Vending Licences Issued by the Ministry of Agriculture, Fisheries and Food by Licence Type 1987 - 1989	59
40.	Distribution of British Columbia Fish Processing Facilities by Geographic Region 1988/89 - 1989/90	60
41.	Regional Employment in the B.C. Fish Processing Sector by Month - 1987	62
42.	Canadian Consumer Price Index for All Items and Selected Food Items 1975 - 1989	63

I. SUMMARY OF THE BRITISH COLUMBIA FISHING AND FISH PROCESSING INDUSTRIES - 1989

From the perspective of the overall British Columbia economy, the commercial fishing and fish processing sectors contributed significantly to the provincial gross domestic product. Commercial fishing is the fourth largest primary industry in the province after forestry, mining, and agriculture; and fish processing accounts for over 25 percent of all food manufacturing activity. The wholesale value of British Columbia fish products accounted for nearly 30 percent of the total value of Canadian marine fish production which is estimated at $3.4 billion.

The year 1989 was one of much change for the commercial fishing industry with the implementation of new regulations as a result of the GATT ruling on salmon and herring and the Free Trade Agreement. In 1989, the quantity of British Columbia fish landings increased by 10 percent from 267,873 tonnes recorded in 1988 to 293,741 tonnes. The increase in overall landings was primarily attributed to a significant increase in groundfish and herring landings. The corresponding landed value however, decreased by 10 percent from $572.6 million to $513.4 million. The decreased landed value reflects a general decrease in landed prices, particularly for salmon. Total commercial salmon landings were virtually identical to 1988, but the landed value declined a significant 18 percent from last year. The overall herring catch was up by 30 percent to 41,008 tonnes from 31,601 tonnes in 1988. The landed value however, decreased by 21 percent. Overall, B.C. halibut landings were down in 1989, as was the landed value. Combined groundfish fisheries showed a marginal increase in landings and a slight decline in landed value. Shellfish fisheries, in total, decreased slightly in harvest quantity but had a modest increase in landed value. Cooperative or joint venture hake fishing arrangements with foreign nations displayed a significant increase in 1989.

The fish processing sector generated a record total wholesale value of $1,018 million in 1989, an increase of 2 percent over the previous year. Commercially caught salmon products recorded a minor increase in wholesale value due in part to the extremely large harvest of higher valued (Adams River) sockeye salmon. Products derived from farmed salmon also showed dramatic growth in 1989, reaching $72.4 million. Despite the increase in landings, the total wholesale value of all herring products decreased slightly. Halibut, groundfish and shellfish showed minor increases in wholesale values.

Regional fish processing activity was distributed much the same as in previous years. In 1988, approximately 70 percent of the total value of fish products originated from the Lower Mainland region, and 16 percent in the Prince Rupert area. Total average employment, based on 1987 data, was 5,539 with 61 percent concentrated in the Lower Mainland area.

A total of 16,484 personal commercial fishing licences were issued by the Department of Fisheries and Oceans in 1989, including 1,612 five-year licences and 14,874 traditional one-year licences. However, a total of 6,250 five-year licences from previous years were valid during 1989, bringing the total number of eligible fishermen to 21,124. Excluding packers and processors a total of 6,221 vessels were licenced to fish commercially in British Columbia in 1989.

Two hundred and eight firms utilizing 176 plants reported processed fish production in 1989. This figure of 208 includes 37 companies that leased facilities or had fish custom-processed. In addition, production was reported by 103 vessels that exported fresh fish directly to United States ports and 45 salmon mariculture operations. The provincial Aquaculture and Commercial Fisheries Branch issued 253 fish processing licences, 580 fish buying licences, 161 fishermen's vending licences, 238 oyster picking permits and 35 marine plant harvesting licences. The wild oyster harvest picked under permit is included in the overall oyster landings. A total of 287 tonnes of marine plants were harvested under permit, although the majority of it is included as finished herring roe on kelp product.

TABLE 1 - QUANTITY AND VALUE OF B.C. FISH LANDINGS BY SPECIES 1989

	LANDED QUANTITY (Tonnes)	LANDED VALUE ($'000)	WHOLESALE VALUE ($'000)
SALMON[1]	84,894	256,100	586,880[2]
SALMON MARICULTURE	11,883	59,739	72,418[2]
SUBTOTAL	96,777	315,839	659,298
HERRING[3]	41,008	76,320	157,782
HALIBUT[4]	4,659	18,696	30,991
GROUNDFISH			
DOGFISH	2,775	1,022	2,612
FLOUNDER	124	73	176
HAKE[5]	74,706	11,333	11,400
LINGCOD	3,980	2,869	7,735
PACIFIC COD	9,142	4,519	10,078
PACIFIC OCEAN PERCH	6,068	2,889	3,092
POLLOCK	434	63	1,016
ROCKFISH[6]	18,388	12,104	22,232
SABLEFISH	5,494	15,058	17,725
SKATE	353	45	172
SOLE	6,352	4,798	10,436
TURBOT	609[7]	116[7]	609[8]
OTHER GROUNDFISH	591	428	9,120
SUBTOTAL	129,016	55,317	96,403
SHELLFISH			
ABALONE	48	1,151	1,222
CLAM[9]	3,682	7,100	11,341
CRABS	1,522	6,089	8,619
GEODUCKS	3,965	12,572	15,275
OCTOPUS	217	703	527
OYSTERS	3,721	2,938	4,340
SEA URCHINS	3,268	2,651	12,198
SHRIMP & PRAWNS	3,119	9,900	15,338
OTHER SHELLFISH	1,695[10]	2,053[10]	3,448[11]
SUBTOTAL	21,237	45,157	72,308
OTHER SPECIES			
STURGEON	9[12]	16[12]	29
TUNA	180[13]	451[13]	594[14]
OTHER	855	1,606	946
SUBTOTAL	1,044	2,073	1,569
TOTAL	293,741	513,402	1,018,351

TABLE 1 - CONT'D - FOOTNOTES

1 Includes salmon roe. Wholesale value includes production derived from U.S. salmon.
2 Includes a small quantity of freshwater trout production.
3 Includes herring spawn on kelp.
4 Includes total landings at United States ports of 766 tonnes valued at $3,589,706.
5 Includes 66,102 tonnes of hake worth $10,225,000 delivered to foreign vessels in co-operative or joint venture fishing arrangements.
6 Includes reedi, greenies, other rockfish, red snapper and silver perch.
7 Includes non-food fish, idiotfish and shark.
8 Includes other groundfish, portions, sticks and specialities, fish meal n.e.s, fish oil n.e.s., and solubles n.e.s.
9 Includes horse clams.
10 Includes scallops, squid, mussels, gooseneck barnacles, crayfish, snails, sea cucumbers, plankton, and other shellfish n.e.s.
11 Includes squid, scallops, mussels, sea cucumbers, gooseneck barnacles, and other shellfish n.e.s.
12 Includes 35 tonnes of tuna worth $70,900 caught in U.S. and international waters and landed in Canada by Canadian fishermen.
13 Includes eulachons, smelt, hagfish, anchovies and other fish.
14 Includes eulachons, smelt, seaweed and floating kelp.

Note: Salmon is reported in standard form; i.e., net caught is reported in round weight and troll caught is reported dressed head-on; halibut is reported dressed head-off; all other fish are reported in round weight.

TABLE 2 - LANDED AND WHOLESALE VALUE OF FISH AND FISH PRODUCTS IN B.C.

1978 - 1989

	Excludes halibut and tuna landed by B.C. fishermen at U.S. ports and hake sold to foreign processors		Includes halibut and tuna landed by B.C. fishermen at U.S. ports and hake sold to foreign processors			
	LANDED VALUE ($'000)	WHOLESALE VALUE ($'000)	LANDED VALUE ($'000)	% CHANGE	WHOLESALE VALUE ($'000)	% CHANGE
1978	243,731	510,667	250,805	+ 49	517,741	+ 43
1979	330,019	563,181	332,972	+ 33	566,134	+ 9
1980	180,529	402,191	184,108	- 45	405,770	- 28
1981	232,358	523,754	236,156	+ 28	526,928	+ 30
1982	235,519	461,159	241,205	+ 2	466,845	- 11
1983	203,094	465,090	209,772	- 13	471,768	+ 1
1984	236,028	460,036	242,930	+ 16	466,938	- 1
1985	372,324[1]	722,243[2]	377,646	+ 55	727,565[2]	+ 56[2]
1986[3]	394,525	759,341	404,687	+ 7	769,410	+ 6
1987[3]	443,203[2]	797,541[2]	455,168[2]	+ 12	809,206[2]	+ 5
1988[3]	560,736	987,406	572,643	+ 26	998,909	+ 23
1989[3]	499,516	1,004,536	513,402	- 10	1,018,351	+ 2

1 Includes tuna caught by Canadian fishermen in U.S. waters and landed in Canada.
2 Revised data.
3 Includes the value of farmed salmonid production.

TABLE 3 - DISTRICT CATCH BY SPECIES - 1989 (LANDED WEIGHT IN TONNES)

Species	North[1] Coast	South Coast	Fraser Area	Total	Landed Value ($'000)
Chinook	2,338	2,125	178	4,641	20,157
Sockeye	4,508	23,167	6,000	33,675	169,272
Coho	2,214	5,460	30	7,704	19,335
Pink	13,276	15,784	533	29,593	33,481
Chum	3,941	5,161	141	9,243	13,778
Steelhead	25	6	1	32	58
Salmon Subtotal	26,302	51,703	6,883	84,888	256,081
Salmon Roe	3	3	*	6	19
TOTAL SALMON[2]	26,305	51,706	6,883	84,894	256,100
Herring	19,511	21,284	-	40,795	67,609
Herring Spawn on Kelp	185	28	-	213	8,711
TOTAL HERRING	19,696	21,312	-	41,008	76,320
Halibut[3]	3,066	827	-	3,893	15,106
Dogfish	95	2,629	51	2,775	1,022
Flounder	39	85	-	124	73
Hake[4]	-	7,003	1,601	8,604	1,108
Ling Cod	1,436	2,544	*	3,980	2,869
Pacific Cod	5,087	4,055	*	9,142	4,519
Pacific Ocean Perch	4,393	1,675	-	6,068	2,889
Pollock	32	275	127	434	63
Rockfish[5]	9,396	8,992	*	18,388	12,104
Sablefish	2,688	2,806	-	5,494	15,058
Skate	290	62	1	353	45
Soles	3,786	2,565	1	6,352	4,798
Turbot	394	215	-	609	116
Other Groundfish[6]	352	219	20	591	428
Groundfish Subtotal	27,988	33,125	1,801	62,914	45,092
Abalone	33	15	-	48	1,151
Clams[7]	117	3,565	*	3,682	7,100
Crabs	590	524	408	1,522	6,089
Geoducks	1,571	2,394	-	3,965	12,572
Octopus	35	181	1	217	703
Oysters	-	3,721	-	3,721	2,938
Shrimp and Prawns	284	2,671	164	3,119	9,900
Scallops	-	72	3	75	315
Sea Cucumbers	586	557	-	1,143	901
Sea Urchins	986	2,273	9	3,268	2,651
Other Shellfish[8]	12	449	16	477	837
Shellfish Subtotal	4,214	16,422	601	21,237	45,157

TABLE 3 - CONT'D

Species	North[1] Coast	South Coast	Fraser Area	Total	Landed Value ($'000)
Eulachons	-	-	19	19	18
Hagfish	-	816	13	829	1,576
Smelt	-	-	*	*	1
Sturgeon	*	1	8	9	16
Tuna[9]	64	81	-	145	380
Other[10]	2	5	-	7	11
Other Subtotal	66	903	40	1,009	2,002
TOTAL[11]	81,335	124,295	9,325	214,955	439,777

1 Includes landings in the Taku/Stikine district.
2 Excludes production from salmon mariculture operations.
3 Excludes 766 tonnes of halibut valued at $3,589,706 landed at U.S. ports.
4 Excludes 66,102 tonnes of hake worth $10,225,343 delivered to foreign vessels in joint venture or co-operative fishing arrangements. An additional 31,576 tonnes was caught by foreign vessels in Canadian waters.
5 Includes reedi, greenies, other rockfish, red snapper and silver perch.
6 Includes non-food fish, idiotfish and shark.
7 Includes horse clams.
8 Includes mussels, gooseneck barnacles, snails, squid, plankton, crayfish and other shellfish n.e.s.
9 Excludes 35 tonnes worth $70,900 caught in U.S. and international waters and landed in Canada by Canadian fishermen.
10 Includes anchovies and other fish.
11 Includes direct deliveries by Canadian fishermen to U.S. ports.

* Less than 1 tonne reported.

Note: Salmon is reported in standard form; i.e., net caught is reported in round weight and troll caught is reported dressed head-on; halibut is reported dressed head-off; and all other fish are reported in round weight.

TABLE 4 - REGIONAL WHOLESALE VALUE OF B.C. FISHERIES PRODUCTION BY PRODUCT CATEGORY 1988 - 1989[1]

($'000)

PRODUCT CATEGORY	LOWER MAINLAND		VANCOUVER ISLAND		SUNSHINE COAST		CENTRAL & NORTH COAST[2]		TOTAL B.C.	
	1988	1989	1988	1989	1988	1989	1988	1989	1988	1989
Fresh	79,631	94,495	29,346	38,323	10,044	29,932	18,002	13,087	137,023	175,837
Frozen	220,491	173,800	61,936	52,418	3,951	5,935	74,252	40,805	360,630	272,958
Cured	183,579	156,949	11,541	7,583	2,063	2,415	40,594	29,088	237,777	196,035
Canned	163,178	252,818	7,285	8,926	-	-	67,019	75,834	237,482	337,578
Other	13,467	20,119	228	1,276	13	121	786	612	14,494	22,128
GRAND TOTAL	660,346	698,181	110,336	108,526	16,071	38,403	200,653	159,426	987,406	1,004,536

1 Excludes over-the-side hake sales, and halibut and tuna landed in U.S. ports but includes salmonid mariculture production.

2 Includes a small amount of production from the interior region.

II. SUMMARY BY SPECIES

A) SALMON

In 1989, the salmon industry in British Columbia, in terms of harvest, was very similar to the previous year. Salmon landings increased by less than one percent from 84,830 tonnes in 1988 to 84,894 tonnes. The landed value however, decreased from $312.1 million to $256.1 million, an 18 percent drop. Despite the largest sockeye catch in recent history and a decrease in harvest of lower valued chums, the overall value decreased. The chinook catch was also up over 1988. The drop in value is directly attributable to substantial decreases in average landed prices for all species. The greatest decrease was demonstrated by coho with a dramatic 58 percent decrease in landed price to $2.21 per kg in 1989. Both chinook and chum dropped in landed price to $3.85 per kg and $1.48 per kg respectively, representing 48 and 47 percent decreases from the previous year. Average sockeye landed prices dropped by 39 percent from last year. In 1989, despite the low landed prices, sockeye accounted for 66 percent of the total landed value of all salmon species, due primarily to the extraordinary harvest.

Seine gear accounted for 49 percent of salmon landings, while troll gear was responsible for 28 percent and gillnet gear 23 percent. Seiners harvested large quantities of pink, chum and sockeye salmon. A significant amount of chum, along with sockeye and the majority of steelhead was landed on gillnet gear. Troll gear accounted for the majority of coho and chinook landings, along with 30 percent of the pink catch.

Primarily as a result of the increased level of higher valued sockeye landings, the total 1989 salmon wholesale value of $586.9 million was up marginally from the 1988 total of $583.6 million, again setting a new record. The total wholesale values of all species except sockeye and pink decreased. The above-average salmon harvest, including the huge sockeye catch, may have diminished the average prices for canned and frozen dressed sockeye. It also, to some extent, contributed to the decreases in the average prices for all species of canned salmon. The large volume of production contributed to the relatively large overall wholesale value. Salmon production again contributed 58 percent to the total wholesale value generated by the British Columbia fish processing industry in 1989, as it did in 1988.

There was a significant change in the mix of salmon products in 1989 from the previous year. Canned salmon accounted for approximately 58 percent of the total salmon wholesale value, as opposed to 40 percent in 1988. Frozen salmon products contributed 32 percent to the 1989 salmon value, down from 46 percent from last year. This shift is as usual, due mainly to the changes in volumes and mix of salmon species harvested. In 1989, large quantities of sockeye, pink and chum were directed towards the canned market with substantial quantities also directed towards the frozen dressed market along with the majority of the chinook and coho production.

In total, the 1989 canned salmon pack consisted of 1,745,716 standard cases, up from the 1988 total of 1,184,057 cases. Compared to 1988, the 1989 pack represented a 47 percent increase in volume and a 43 percent increase in wholesale value.

In 1989, pink salmon accounted for 53 percent, sockeye 36, chum 6, coho 4, and others less than one percent of the number of cases produced. In terms of wholesale value, however, sockeye contributed 51 percent to the total canned salmon value, while pink accounted for 40 percent, chum 4 percent and coho 4 percent. All species of salmon exhibited significant decreases in average wholesale prices of canned products, except coho. The most notable drop was exhibited by sockeye and pink which declined 19 percent from the previous year. Overall, the reported net selling value for all canned salmon was 5 percent less than the total wholesale value.

Fresh dressed salmon production was nearly evenly divided between head-on and head-off products, at 48 and 52 respectively, while most (82 percent) of the frozen dressed salmon was marketed in a head-off form. Frozen dressed, head-off salmon accounted for 72 percent of the total dressed production in 1989 compared to 74 percent in 1988, with the highest price received for frozen dressed, head-off sockeye at $9.12/kg. The average prices of all dressed salmon products demonstrated significant declines from the previous year.

In 1989, for the first time, data on the grades of frozen dressed salmon was tabulated. Of the total frozen dressed salmon products, 86 percent of the volume was reported as number one grade. Specifically, 92% of the head-on products, and 85% of the head-off products were designated as number one grade.

Also, for the first time, in 1989 caviar products were specifically documented from other salmon roe products, with a total wholesale value of almost $3.4 million being generated.

The total wholesale value of smoked salmon decreased to $18.3 million, down by 5 percent from the previous year and accounted for 3 percent of the value of all salmon products. Cold smoked salmon accounted for 82 percent of the wholesale value of smoked salmon production, down from 94 percent in the previous year. Prices for cold-smoked salmon remained high in 1989 with sockeye at $25.12 per kg, a slight decrease from last year. Again in 1989, data on specialty smoked salmon products was separated from cold and hot smoked products and accounted for $1.3 million. Some of these products generated even higher average prices.

Again in 1989, data on portion pack/specialty items were collected. These value-added products generated $2.1 million in total wholesale value.

Fresh, salted, and other products, as well as roe and salmon by-products were also processed. These different products accounted for approximately 7 percent of the total salmon wholesale value.

It should be noted that this discussion, and Tables 5 to 22 following, reflect production from commercially caught wild salmon only. In 1989, fish processing facilities generated $72.4 million worth of products derived from marine pen-reared salmonids. These products will be discussed in subsection F of the report. In total, including salmon from all sources, the B.C. industry generated $659.3 million in salmon products or approximately 65 percent of the total B.C. wholesale value.

TABLE 5 - LANDINGS OF SALMON BY SPECIES AND STATISTICAL AREA - 1989[1]
(Round weight in tonnes)

AREA	CHINOOK	SOCKEYE	COHO	PINK	CHUM	STEELHEAD	TOTAL
TAKU	8	60	13	1	*	*	82
STIKINE	10	58	21	1	3	*	93
SUBTOTAL	18	118	33	2	3	1	175
NORTH COAST							
1	1,164	521	1,107	2,708	163	1	5,663
2E	72	27	152	90	564	*	905
2W	957	669	256	1,063	132	*	3,078
3	160	1,136	409	7,209	936	5	9,854
4	125	1,626	196	1,719	365	14	4,046
5	41	58	144	593	116	1	953
6	36	12	48	101	91	*	288
7	38	20	62	66	443	*	629
8	46	79	50	288	1,082	2	1,547
9	6	177	10	10	49	*	252
10	7	210	38	19	43	*	318
30	8	10	10	19	1	-	49
SUBTOTAL	2,659	4,546	2,482	13,884	3,987	24	27,582
SOUTH COAST							
11	69	1,113	255	573	54	1	2,065
12	182	8,421	308	6,918	1,574	2	17,407
13	111	2,364	96	2,091	1,079	*	5,742
14	45	4	104	7	505	*	665
15	3	*	7	1	*	-	11
16	8	421	7	66	18	*	521
17	6	3	3	6	3	-	22
18	3	60	1	40	*	*	104
19	-	*	*	*	-	-	*
20	142	8,570	809	3,485	116	1	13,123
21	42	40	183	91	1,742	*	2,099
22	-	-	-	-	-	-	-
23	869	739	1,226	810	6	*	3,649
24	311	396	1,667	634	5	*	3,014
25	115	206	584	381	5	*	1,291
26	105	274	380	263	8	*	1,030
27	367	1,091	574	1,196	75	*	3,304
SUBTOTAL	2,378	23,705	6,206	16,562	5,191	7	54,049
FRASER AREA							
28	-	-	-	-	-	-	-
29AB	118	4,764	29	522	140	1	5,574
29C	3	202	1	15	*	*	220
29D	58	1,049	1	18	1	*	1,127
29E	-	-	-	-	-	-	-
SUBTOTAL	179	6,015	31	555	141	1	6,921
TOTAL B.C.	**5,234**	**34,383**	**8,752**	**31,004**	**9,322**	**32**	**88,727**

1 Rows and columns may not total exactly, due to rounding. See Appendix I for for Statistical Area Maps.

* Less than 500 kg.

SOURCE: Department of Fisheries and Oceans, Pacific Region

TABLE 6 - LANDINGS OF SALMON BY SPECIES AND GEAR 1978 - 1989

(Round Weight in Tonnes)

GILLNET GEAR

	CHINOOK	SOCKEYE	COHO	PINK	CHUM	TOTAL[1]	VALUE[2]	AVERAGE NUMBER OF DELIV.	AVERAGE CATCH PER DELIV.	VALUE PER DELIV.
	(t)	(t)	(t)	(t)	(t)	(t)	($'000)	('000)	(kg)	($)
1978	997	7,819	1,281	2,319	6,641	19,102	38,687	69	277	561
1979	886	7,435	774	2,146	2,151	13,430	34,796	52	258	669
1980	670	3,265	848	1,711	7,548	14,084	31,042	51	276	609
1981	652	9,031	562	4,660	3,182	18,153	39,222	53	342	740
1982	917	9,817	870	526	5,525	17,742	41,387	51	348	811
1983	594	4,472	531	3,886	2,575	12,100	20,586	46	263	448
1984	763	6,542	518	1,826	2,988	12,761	35,674	51	250	699
1985	525	13,461	857	4,012	6,211	25,218	67,387	70	360	962
1986	516	11,073	981	4,217	9,216	26,130	67,689	65	402	1,041
1987	271	6,619	380	4,464	4,236	16,027	54,327	47	341	1,156
1988	485	7,591	417	1,745	8,966	19,281	90,036	55	351	1,637
1989	789	12,475	687	2,687	3,955	20,616	71,143	58	355	1,227

SEINE GEAR

	CHINOOK	SOCKEYE	COHO	PINK	CHUM	TOTAL[1]	VALUE[2]	AVERAGE NUMBER OF DELIV.	AVERAGE CATCH PER DELIV.	VALUE PER DELIV.
	(t)	(t)	(t)	(t)	(t)	(t)	$'000)	('000)	(kg)	($)
1978	886	11,107	1,108	12,326	8,901	34,337	57,796	13	2,641	4,446
1979	903	5,861	1,539	13,983	2,425	24,717	42,522	12	2,060	3,544
1980	588	4,327	1,252	9,650	8,972	24,796	41,854	12	2,066	3,488
1981	774	11,636	1,430	24,297	2,847	40,994	63,864	10	4,099	6,386
1982	780	12,617	1,245	3,148	9,147	26,952	51,818	10	2,695	5,181
1983	496	9,006	1,354	30,207	2,150	43,225	48,443	11	3,930	4,404
1984	444	5,791	843	7,811	5,603	20,514	38,399	13	1,578	2,953
1985	733	14,735	1,410	25,996	15,769	58,676	106,902	14	4,190	7,635
1986	580	12,944	1,776	23,679	14,152	53,156	101,972	14	3,797	7,284
1987	355	6,283	985	15,415	6,413	29,465	68,117	10	2,947	6,812
1988	298	3,693	620	25,559	20,218	50,401	122,919	14	3,600	8,780
1989	557	17,266	1,194	19,068	4,846	42,936	111,841	10	4,294	11,184

TABLE 6 - CONT'D

TROLL GEAR

	CHINOOK	SOCKEYE	COHO	PINK	CHUM	TOTAL[1]	VALUE[2]	AVERAGE NUMBER OF DELIV.	AVERAGE CATCH PER DELIV.	VALUE PER DELIV.
	(t)	(t)	(t)	(t)	(t)	(t)	($'000)	('000)	(kg)	($)
1978	6,004	3,395	6,763	686	313	17,165	61,681	150	114	411
1979	5,056	1,236	8,029	8,567	175	23,067	83,215	163	142	511
1980	5,282	135	6,925	2,357	289	14,991	44,107	189	79	233
1981	4,490	333	5,522	9,296	128	19,774	54,984	164	121	335
1982	5,395	7,709	7,182	303	419	21,010	71,897	169	124	420
1983	4,288	848	8,576	5,445	148	19,334	42,056	170	114	247
1984	5,047	544	8,728	2,422	412	17,157	70,725	138	124	513
1985	4,211	3,373	6,710	7,692	1,666	23,669	72,381	124	191	584
1986	3,911	6,816	10,481	1,609	1,829	24,652	96,113	112	220	858
1987	4,623	2,133	7,050	7,042	351	21,203	89,616	84	252	1,067
1988	5,138	659	6,040	4,913	1,113	17,866	99,110	86	208	1,152
1989	3,889	4,642	6,871	9,250	521	25,175	73,097	75	336	975

1 Totals include steelhead.

2 1978-1983 values do not include year-end bonus or direct delivery payments. 1984-1987 values include year-end bonus payments. 1985 values include direct delivery payments.

TABLE 7 - SHARE OF SALMON LANDINGS BY SPECIES AND GEAR - 1989[1]

(Round Weight in Tonnes)

Species	Gillnet Tonnes	Share %	Seine Tonnes	Share %	Troll Tonnes	Share %	Total Tonnes
Chinook	789	15.1	557	10.6	3,889	74.3	5,234
Sockeye	12,475	36.3	17,266	50.2	4,642	13.5	34,383
Coho	687	7.8	1,194	13.7	6,871	78.5	8,752
Pink	2,687	8.7	19,068	61.5	9,249	29.8	31,004
Chum	3,955	42.4	4,846	52.0	521	5.6	9,322
Steelhead	24	75.0	6	18.8	2	6.2	32
TOTAL	20,616	23.2	42,936	48.4	25,175	28.4	88,727

1 Rows and columns may not total exactly, due to rounding.

TABLE 8 - LANDED AND WHOLESALE VALUE OF SALMON BY PRODUCT TYPE 1978 - 1989

($'000)

	LANDED VALUE[1]	CANNED	FRESH	FROZEN	ROE	OTHER	TOTAL WHOLESALE VALUE
1978	158,686	115,913	14,584	134,416	24,202	14,904	304,019
1979	161,113	115,927	8,127	143,093	11,393	11,087	289,627
1980	117,149	146,828	10,429	109,300	13,209	9,341	289,107
1981	158,226	237,391	6,744	108,047	12,802	8,694	373,678
1982	165,207	127,126	10,633	155,762	9,829	11,988	315,338
1983	111,097	176,191	13,414	80,873	3,186	10,625	284,289
1984	144,814	94,457	15,432	145,679	5,065	15,608	276,241
1985	246,696	258,646	14,137	206,647	12,019	20,794	512,243
1986	265,778	277,913	19,244	198,557	13,947	26,562	536,223
1987	212,063	171,573	24,773	189,824	9,180	30,251	425,601
1988	312,087	236,780	23,944	265,686	20,289[2]	36,931	583,630
1989	256,100	337,519	23,603	190,441	7,751[2]	27,566	586,880

1 Includes salmon roe.
2 Includes caviar, No. 1 and other roe grades.

TABLE 9 - LANDED AND WHOLESALE VALUE OF SALMON BY SPECIES 1978 - 1989

	Quantity Landed in Tonnes (Round Weight)	Landed Value ($'000)	Average Landed Price ($/kg)	Wholesale Value ($'000)[1]	Landed Value as a Percent of Wholesale Value (%)
CHINOOK					
1978	7,887	29,461	3.74	35,897	82.1
1979	6,845	31,159	4.55	40,475	77.0
1980	6,540	24,307	3.72	38,421	63.3
1981	5,916	25,731	4.35	38,051	67.6
1982	7,092	31,205	4.40	41,490	75.2
1983	5,378	17,614	3.28	29,489	59.7
1984	6,254	37,318	5.97	45,861	81.4
1985	5,469	25,564	4.67	41,433	61.7
1986	5,007	19,658	3.93	31,206	63.0
1987	5,249	30,527	5.82	41,489	73.6
1988	5,921	43,795	7.40	57,979	75.5
1989	5,234	20,157	3.85	34,071	59.3
SOCKEYE					
1978	22,321	55,181	2.47	107,817	51.2
1979	14,532	43,307	2.98	81,008	53.5
1980	7,727	18,222	2.36	47,416	38.4
1981	21,000	54,577	2.60	122,073	44.7
1982	30,143	78,860	2.62	155,363	50.8
1983	14,326	36,617	2.56	83,988	43.6
1984	12,877	45,976	3.57	84,191	54.6
1985	31,569	120,428	3.81	206,338	58.4
1986	30,833	143,270	4.65	237,871	60.2
1987	15,035	87,381	5.81	147,997	59.0
1988	11,943	96,408	8.07	150,134	64.2
1989	34,383	169,272	4.92	291,198	58.1
COHO					
1978	9,152	27,269	2.98	41,023	66.5
1979	10,342	44,063	4.26	57,203	77.0
1980	9,025	23,078	2.56	43,568	53.0
1981	7,514	22,009	2.93	37,984	57.9
1982	9,297	26,144	2.81	42,582	61.4
1983	10,461	22,504	2.15	39,306	57.3
1984	10,089	35,532	3.52	59,624	59.6
1985	8,977	26,555	2.96	48,362	54.9
1986	13,238	39,264	2.97	66,090	59.4
1987	8,415	33,747	4.01	61,803	54.6
1988	7,077	37,688	5.33	59,134	63.7
1989	8,752	19,335	2.21	45,481	42.5

TABLE 9 - CONT'D

	Quantity Landed in Tonnes (Round Weight)	Landed Value ($'000)	Average Landed Price ($/kg)	Wholesale Value ($'000) [1]	Landed Value as a Percent of Wholesale Value (%)
PINK					
1978	15,331	12,835	0.84	37,852	33.9
1979	24,696	29,685	1.20	76,867	38.6
1980	13,718	15,118	1.10	50,425	30.0
1981	38,253	45,822	1.20	117,302	39.1
1982	3,977	3,195	0.80	13,675	23.4
1983	39,538	26,651	0.67	103,767	25.7
1984	12,059	10,742	0.89	38,195	28.1
1985	37,700	38,979	1.03	115,160	33.8
1986	29,505	25,691	0.87	96,812	26.5
1987	26,921	33,479	1.24	102,293	32.7
1988	32,217	49,303	1.53	160,956	30.6
1989	31,004	33,481	1.08	121,199	27.6
CHUM					
1978	15,855	33,336	2.10	50,878	65.5
1979	4,751	12,243	2.58	21,262	57.6
1980	16,809	36,197	2.15	63,960	56.6
1981	6,157	9,781	1.59	21,653	45.2
1982	15,091	25,528	1.69	42,768	59.7
1983	4,899	7,605	1.55	14,735	51.6
1984	9,003	14,938	1.66	34,835	42.9
1985	23,646	34,755	1.47	75,907	45.8
1986	25,197	37,614	1.49	77,904	48.3
1987	11,000	26,779	2.43	55,926	47.9
1988	30,297	84,621	2.79	145,581	58.1
1989	9,322	13,778	1.48	42,085	32.7
STEELHEAD					
1978	57	82	1.44	258	31.8
1979	48	96	2.00	250	38.4
1980	52	81	1.56	247	32.8
1981	81	147	1.81	387	38.0
1982	104	170	1.63	520	32.7
1983	57	94	1.65	308	30.5
1984	150	292	1.95	1,032	28.3
1985	202	389	1.92	857	45.4
1986	158	277	1.75	895	30.9
1987	75	147	1.96	445	33.0
1988	93	250	2.69	842	29.7
1989	32	58	1.81	257	22.6

1 Revised. Does not include the wholesale value derived from salmon caught in U.S. waters and canned in British Columbia.

TABLE 10 - WHOLESALE VALUE OF SALMON BY SPECIES 1978 - 1989

($'000)

	CHINOOK	SOCKEYE	COHO	PINK	CHUM	STEEL-HEAD	NOT CLASSIFIED	TOTAL WHOLESALE VALUE
1978	35,897	107,817	41,023	39,544	50,878	258	28,602	304,019
1979	40,475	81,008	57,203	76,867	21,262	250	12,562	289,627
1980	38,427	68,224	43,645	58,655	64,608	248	15,300	289,107
1981	38,073	131,030	38,433	128,553	22,271	387	14,931	373,678
1982	41,495	158,492	42,595	17,813	42,887	520	11,536	315,338
1983	29,490	84,996	39,384	109,732	14,777	308	5,602	284,289
1984	45,863	86,165	59,772	44,761	35,815	1,032	2,833	276,241
1985	41,435	206,810	48,762	135,376	76,705	857	2,298	512,243
1986	31,235	244,337	68,307	108,403	79,707	895	3,339	536,223
1987	41,505	154,162	63,025	106,330	56,540	445	3,594	425,601
1988	57,979	154,054	59,350	161,690	146,086	842	3,629	583,630
1989	34,153	297,181	46,560	162,389	42,655	257	3,685	586,880

TABLE 11 - PRODUCTION AND UTILIZATION OF BC SALMON BY SPECIES 1988 - 1989

	UNIT	1988 QUANTITY	1988 VALUE[1] ($'000)	1988 AVERAGE[2] PRICE ($)	1989 QUANTITY	1989 VALUE[1] ($'000)	1989 AVERAGE[2] PRICE ($)
CHINOOK							
Canned	48-lb. cases	3,092	465	150.44	8,855	1,278	144.33
Fresh Round	000 kg	*	*	-	28	92	3.29
Fresh Dressed	000 kg	392	3,690	9.42	262	1,583	6.04
Frozen Round	000 kg	*	*	-	-	-	-
Frozen Dressed	000 kg	3,996	48,988	12.26	3,507	26,814	7.65
Frozen Steaks	000 kg	3	26	9.95	4	61	15.25
Salted	000 kg	35	527	15.10	15	132	8.80
Smoked	000 kg	166	3,392	20.43	184	3,901	21.20
Roe	000 kg	61	891	14.67	8	86	10.75
Caviar[6]	000 kg	-	-	-	8	206	68.67
Portion Pack/Specialty Products	000 kg	-	-	-	*	*	4.00
TOTAL CHINOOK		-	57,979	-	-	34,153	-
SOCKEYE							
Canned	48-lb. cases	206,715	69,098	334.27	634,429	172,164	271.37
Fresh Round	000 kg	*	*	-	664	3,361	5.06
Fresh Dressed	000 kg	399	4,735	11.87	972	7,408	7.62
Frozen Round	000 kg	-	-	-	45	318	7.07
Frozen Dressed	000 kg	3,852	54,962	14.27	10,585	95,643	9.04
Frozen Steaks	000 kg	25	284	11.54	22	281	12.77
Salted	000 kg	798	12,412	15.55	402	4,282	10.65
Smoked	000 kg	417	10,357	24.81	398	9,921	24.93
Roe	000 kg	197	1,565	7.95	212	1,958	9.24
Caviar[6]	000 kg	-	-	-	*	*	29.00
Portion Pack/Speciality Products	000 kg	48	641	13.29	133	1,845	13.87
Other	000 kg	-	-	-	-	-	-
TOTAL SOCKEYE		-	154,054	-	-	297,181	-

TABLE 11 - CONT'D

	UNIT	1988 QUANTITY	1988 VALUE[1] ($'000)	1988 AVERAGE[2] PRICE ($)	1989 QUANTITY	1989 VALUE[1] ($'000)	1989 AVERAGE[2] PRICE ($)
COHO							
Canned	48-lb. cases	23,715	5,007	211.14	66,639	14,198	213.06
Fresh Round	000 kg	*	*	-	54	114	2.11
Fresh Dressed	000 kg	582	3,998	6.87	719	3,135	4.36
Frozen Round	000 kg	-	-	-	-	-	-
Frozen Dressed	000 kg	4,410	46,855	10.63	4,967	26,822	5.40
Frozen Steaks	000 kg	70	1,446	20.56	61	864	14.16
Salted	000 kg	-	4	8.43	*	*	9.00
Smoked	000 kg	51	1,019	20.12	42	865	20.60
Roe	000 kg	46	544	11.86	19	189	9.95
Caviar[6]	000 kg	-	-	-	16	373	23.31
Portion Pack/Specialty Products	000 kg	22	477	22.15	*	*	18.75
Other	000 kg	-	-	-	-	-	-
TOTAL COHO		-	59,350	-	-	46,560	-
PINK							
Canned	48-lb. cases	734,329	132,801	180.85	935,033	137,260	146.80
Fresh Round	000 kg	*	*	-	121	142	1.17
Fresh Dressed	000 kg	551	2,073	3.76	892	2,460	2.70
Frozen Round	000 kg	*	*	-	*	*	1.30
Frozen Dressed	000 kg	4,457	24,600	5.52	6,701	21,064	3.14
Frozen Steaks	000 kg	1	11	8.35	2	10	5.00
Salted	000 kg	*	*	-	*	*	3.22
Smoked	000 kg	34	625	18.13	24	446	18.58
Roe	000 kg	286	1,580	5.52	149	1,007	6.76
Caviar[6]	000 kg	-	-	-	*	*	12.07
TOTAL PINK		-	161,690	-	-	162,389	-

TABLE 11 - CONT'D

	UNIT	1988 QUANTITY	1988 VALUE[1] ($'000)	1988 AVERAGE[2] PRICE ($)	1989 QUANTITY	1989 VALUE[1] ($'000)	1989 AVERAGE[2] PRICE ($)
CHUM							
Canned	48-lb. cases	215,586	29,323	136.02	100,525	12,592	125.26
Fresh Round	000 kg	427	1,225	2.87	477	1,084	2.27
Fresh Dressed	000 kg	1,572	8,149	5.18	1,237	4,195	3.39
Frozen Round	000 kg	-	-	-	-	-	-
Frozen Dressed	000 kg	14,287	85,913	6.01	4,398	16,636	3.78
Frozen Steaks	000 kg	220	1,990	9.05	164	1,230	7.50
Salted	000 kg	*	*	-	*	*	-
Smoked	000 kg	261	3,777	14.46	227	3,127	13.78
Roe[6]	000 kg	1,284	15,709	12.24	89	1,025	11.52
Caviar	000 kg	-	-	-	105	2,766	26.34
Portion Pack/Specialty Products	000 kg	-	-	-	*	*	12.30
Other	000 kg	*	*	-	-	-	-
TOTAL CHUM		-	146,086	-	-	42,655	-
STEELHEAD							
Canned	48-lb. cases	620	86	139.51	235[3]	27	80.60
Fresh Round	000 kg	-	-	-	-	-	-
Fresh Dressed	000 kg	10	55	5.38	6	29	4.83
Frozen Round	000 kg	-	-	-	-	-	-
Frozen Dressed	000 kg	87	605	6.93	35	187	5.34
Frozen Steaks	000 kg	-	-	-	-	-	-
Smoked	000 kg	6	96	15.89	1	14	14.00
Roe	000 kg	-	-	-	*	*	11.11
Portion Pack/Specialty Products	000 kg	-	-	-	*	*	10.00
Other	000 kg	-	-	-	-	-	-
TOTAL STEELHEAD		-	842	-	-	257	-

TABLE 11 - CONT'D

	UNIT	1988 QUANTITY	1988 VALUE[1] ($'000)	1988 AVERAGE[2] PRICE ($)	1989 QUANTITY	1989 VALUE[1] ($'000)	1989 AVERAGE[2] PRICE ($)
ALL SALMON[4]							
Canned	48-lb.cases	1,184,057	236,780	199.97	1,745,716	337,519	193.34
Fresh Round	000 kg	433	1,244	2.87	1,344	4,793	3.57
Fresh Dressed	000 kg	3,506	22,700	6.47	4,088	18,810	5.66
Frozen Round	000 kg	*	*	-	437	829	1.90
Frozen Dressed	000 kg	31,089	261,923	8.42	30,193	187,166	6.20
Frozen Steaks	000 kg	319	3,757	11.79	253	2,446	9.67
Salted	000 kg	889	13,424	15.11	427	4,452	10.43
Smoked	000 kg	936	19,266	20.59	876	18,274	20.86
Salmon Roe	000 kg	1,873	20,289	10.83	486	4,365	8.98
Caviar[6]	000 kg	-	-	-	130	3,386	26.05
Portion Pack/Specialty Products	000 kg	136	1,957	14.37	200	2,708	13.54
Other[5]		-	2,290	-	-	2,132	-
TOTAL ALL SALMON		-	583,630	-	-	586,880	-

1 Note: Any discrepancies in VALUE ($'000) figures are due to rounding.

2 Average Price:
Canned Salmon $'s per 48-lb. case.
Other Salmon Products $'s per kg.
Value divided by quantity may not equal average price due to rounding.

3 Less than 1,000 kilograms reported.

4 Note: The total value of "ALL SALMON" includes values for products including offal, oil, meal, etc. which could not be allocated to particular species. Also included are the value of items where less than three companies are reported. In a number of cases, however, confidential data is included if the total processed product represented by the confidential data is accounted for by three or more companies.

5 Includes offal, offal meal, oil, heads, bait, milts, animal feed, and other products.

6 Caviar products prior to 1989 were combined with other salmon roe products.

* Confidential. Fewer than three companies reporting.

TABLE 12 - B.C. CANNED SALMON PRODUCTION BY REGION - 1989[1]

(48 lb. Cases)

AREA	CHINOOK	SOCKEYE	COHO	PINK	CHUM	STEELHEAD	TOTAL
North Coast	1,786	78,720	11,381	281,504	17,969	60	391,420
South Coast & Fraser Area	7,069	555,709	55,258	653,529	82,556	175	1,354,296
TOTAL	8,855	634,429	66,639	935,033	100,525	235	1,745,716

1 Does not include imported salmon custom canned in B.C. for U.S. companies.

TABLE 13 - COMPARISON OF THE 1989 CANNED SALMON PACK TO THE 12 YEAR AVERAGE PACK

1978 - 1989

	1978 - 1989 Average (48 lb. cases)	1989 (48 lb. cases)	Difference (%)
Sockeye	438,155	634,429	+45
Coho	51,837	66,639	+29
Pink	680,765	935,033	+37
Chum	126,844	100,525	-21
Other	7,050	9,090	+29
TOTAL	1,304,651	1,745,716	+34

TABLE 14 - BRITISH COLUMBIA CANNED SALMON PRODUCTION QUANTITY AND VALUE BY SPECIES - 1989[1]

SPECIES	QUANTITY (48 lb. Cases)	WHOLESALE VALUE ($'000)	AVG. PRICE $/48 lb. Case[2]	NET SELLING VALUE ($'000)	AVERAGE PRICE $/48 lb. Case[2]
Red Chinook	4,398	558	126.94	522	118.70
Pink Chinook	3,863	638	164.95	584	151.11
White Chinook	594	82	137.04	80	135.26
Sockeye	634,429	172,164	271.37	164,850	259.84
Coho	66,639	14,198	213.06	13,749	206.32
Pink	935,033	137,260	146.80	128,775	137.72
Chum	100,525	12,592	125.26	11,789	117.28
Steelhead	235	27	113.37	26	109.46
TOTAL	1,745,716	337,519	-	320,375	-

1 Fish processors were requested to report both a final wholesale value and a net selling value for their canned salmon production. The final wholesale value represents gross sales based upon company invoices. The net selling value refers to the final selling price after promotions, case allowances, cash discounts and other trade discounts which may apply.

2 Value divided by quantity may not equal average price due to rounding.

TABLE 15 - BRITISH COLUMBIA CANNED SALMON PACK BY YEAR 1978 - 1989

(48 lb. Case)

	CHINOOK	SOCKEYE	COHO	PINK	CHUM	STEELHEAD	TOTAL
1978	8,916	485,748	53,960	456,058	121,487	707	1,126,876
1979	12,953	295,858	43,061	569,337	33,689	327	955,225
1980	7,599	368,844	88,217	472,462	176,884	420	1,114,426
1981	7,839	622,490	61,333	1,020,545	87,866	472	1,800,545
1982	7,661	548,998	47,246	140,415	74,127	384	818,831
1983	4,306	371,483	60,560	996,727	47,120	331	1,480,527
1984	2,709	230,798	25,832	338,474	68,579	276	666,668
1985	4,769	583,579	39,559	1,002,477	269,070	1,025	1,900,479
1986	6,417	599,320	82,375	900,782	264,282	599	1,853,775
1987	3,667	309,597	29,546	602,539	62,909	424	1,008,682
1988	3,092	206,715	23,715	734,329	215,586	620	1,184,057
1989	8,855	634,429	66,639	935,033	100,525	235	1,745,716

TABLE 16 - AVERAGE WHOLESALE PRICE OF BRITISH COLUMBIA CANNED SALMON BY YEAR 1978 - 1989

($/48 lb. Case)

	CHINOOK	SOCKEYE	COHO	PINK	CHUM	STEELHEAD
1978	73.01	128.69	105.43	82.89	75.81	70.19
1979	82.25	159.06	132.16	103.53	93.12	93.49
1980	93.25	168.87	134.60	114.41	100.98	98.73
1981	105.01	175.17	145.55	107.87	96.34	104.22
1982	114.61	177.12	145.87	115.96	78.11	111.98
1983	103.02	178.46	136.61	97.04	93.83	112.52
1984	103.57	198.87	146.77	112.35	93.82	89.46
1985	105.87	201.61	150.18	111.38	84.69	94.39
1986	103.26	236.11	177.61	111.32	78.64	99.12
1987	102.74	266.34	176.66	128.05	100.29	126.64
1988	150.44	334.27	211.14	180.85	136.02	139.51
1989	144.33	271.37	213.06	146.80	125.26	113.37

TABLE 17 - QUANTITY AND WHOLESALE VALUE OF BRITISH COLUMBIA DRESSED SALMON PRODUCTION BY SPECIES - 1989[1]

	FRESH DRESSED						FROZEN DRESSED						TOTAL		
	Head-On			Head-off			Head-On			Head-Off			Fresh/Frozen Dressed		
SPECIES	000 kg	$000	$/kg	000 kg	$000	$/kg	000 kg	$000	$/kg	000 kg	$000	$/kg	000 kg	$000	$/kg
Red Chinook	189	1,121	5.94	60	392	6.48	222	1,533	6.91	2,887	22,618	7.03	3,358	25,664	7.64
Pink Chinook	2	11	4.58	*	*	5.42	*	*	5.00	171	1,348	7.88	173	1,359	7.86
White Chinook	7	32	4.57	3	19	6.02	6	24	3.91	217	1,273	5.07	233	1,348	5.79
Sockeye	766	5,614	7.33	206	1,794	8.70	2,955	26,957	9.12	7,630	68,686	9.00	11,557	103,051	8.92
Coho	485	1,780	3.67	234	1,355	5.78	1,264	6,123	4.84	3,703	20,699	5.59	5,686	29,957	5.27
Pink	454	1,100	2.42	438	1,360	3.10	980	2,988	3.05	5,721	18,076	3.16	7,593	23,524	3.10
Silver Brite Chum	32	152	4.73	630	2,240	3.55	18	75	4.17	2,188	9,019	4.12	2,868	11,486	4.00
Semi Brite Chum	8	24	3.00	468	1,542	3.30	33	111	3.39	1,157	4,409	3.81	1,666	6,086	3.65
Dark Chum	30	60	2.01	69	177	2.57	47	123	2.62	955	2,899	3.04	1,101	3,259	2.96
Steelhead	5	27	5.80	1	2	3.74	18	109	5.95	17	78	4.50	41	216	5.27
TOTAL[2]	1,978	9,921	-	2,109	8,881	-	5,543	38,043	-	24,646	149,105	-	34,276	205,950	-

1 Excludes farm raised salmon.
2 Excludes products that were reported by less than three companies.
* Confidential. Fewer than three companies reporting.

Note: Value divided by quantity may not equal average price due to rounding.

TABLE 18 - QUANTITY AND WHOLESALE VALUE OF BRITISH COLUMBIA FROZEN DRESSED SALMON PRODUCTION BY SPECIES AND GRADE - 1989[1]

	FROZEN DRESSED HEAD-ON						FROZEN DRESSED HEAD-OFF						TOTAL		
	No. 1			Other			No. 1			Other			Frozen Dressed		
SPECIES	000 kg	$000	$/kg	000 kg	$000	$/kg	000 kg	$000	$/kg	000 kg	$000	$/kg	000 kg	$000	$/kg
Red Chinook	218	1,507	6.91	4	26	6.50	2,332	19,068	8.18	555	3,550	6.40	3,109	24,151	7.77
Pink Chinook	*	*	-	-	-	-	161	1,294	8.04	10	54	5.40	171	1,348	7.88
White Chinook	10[2]	32[2]	3.20	*	*	-	178	1,089	6.12	39	184	4.72	227	1,315	5.79
Sockeye	2,706	24,954	9.22	249	2,003	8.04	6,278	57,319	9.13	1,352	11,367	8.41	10,585	95,643	9.04
Coho	1,181	5,721	4.84	83	402	4.84	3,270	18,397	5.63	433	2,302	5.32	4,967	26,822	5.40
Pink	929	2,795	3.00	51	193	3.78	4,990	15,805	3.17	731	2,271	3.12	6,701	21,064	3.14
Silver Brite Chum	18	75	4.17	*	*	_	2,057	8,511	4.14	131	508	3.88	2,206	9,094	4.12
Semi Brite Chum	33	111	3.36	*	*	_	958	3,646	3.81	199	763	3.83	1,190	4,520	3.80
Dark Chum	47	123	2.62	*	*	_	609	1,912	3.14	346	987	2.85	1,002	3,022	3.02
Steelhead	17	105	6.18	1	4	4.00	15	70	4.67	2	8	4.00	35	187	5.34
TOTAL[2]	5,159	35,423	-	388	2,628	-	20,848	127,111	-	3,798	21,994	-	30,193	187,166	-

1 Excludes farm raised salmon.
2 Includes a small amount of pink chinook production.
* Confidential. Fewer than three companies reporting. Included in frozen dressed head-on No. 1 grade.

Note: Value divided by quantity may not equal average price due to rounding.

TABLE 19 - FROZEN DRESSED SALMON PRODUCTION IN B.C. BY YEAR 1978 - 1989[1]

(Tonnes)

	CHINOOK	SOCKEYE	COHO	PINK	CHUM	STEELHEAD
1978	4,478	5,224	4,974	406	8,370	41
1979	4,247	4,650	6,827	4,884	3,268	36
1980	3,745	817	4,388	1,299	8,572	33
1981	3,738	2,962	4,196	5,686	2,824	56
1982	4,013	9,757	5,425	413	8,643	86
1983	2,737	2,133	5,722	4,277	2,217	53
1984	3,985	3,574	7,219	1,746	5,523	149
1985	3,513	9,241	5,627	6,147	10,816	137
1986	3,020	9,079	6,852	1,624	11,420	157
1987	3,323	4,819	5,642	5,507	6,079	56
1988	3,996	3,852	4,410	4,457	14,287	87
1989	3,507	10,585	4,967	6,701	4,398	35

TABLE 20 - AVERAGE WHOLESALE PRICE OF FROZEN DRESSED SALMON BY YEAR 1978-1989[1]

($/kg)

	CHINOOK	SOCKEYE	COHO	PINK	CHUM	STEELHEAD
1978	6.06	6.50	6.48	3.51	4.53	4.74
1979	7.42	6.06	7.05	3.44	5.14	5.64
1980	7.61	5.71	6.15	3.44	5.07	5.71
1981	8.30	6.22	6.41	3.15	4.43	5.76
1982	8.33	5.36	6.17	3.15	3.97	4.89
1983	7.51	5.24	4.91	2.58	3.87	5.00
1984	9.31	7.19	7.12	3.20	4.30	5.81
1985	9.78	7.52	6.84	3.11	3.93	5.06
1986	7.87	8.63	6.68	3.13	3.77	4.77
1987	9.58	10.40	8.52	4.26	5.35	5.62
1988	12.26	14.27	10.63	5.52	6.01	6.93
1989	7.65	9.04	5.40	3.14	3.78	5.34

1 Includes both head-on and head-off products. See Table 17 for 1989 average prices of head-on and head-off products. Excludes farm raised salmon.

TABLE 21 - FRESH DRESSED SALMON PRODUCTION IN B.C. BY YEAR 1978 - 1989[1]

(Tonnes)

	CHINOOK	SOCKEYE	COHO	PINK	CHUM	STEELHEAD
1978	535	486	307	35	239	1
1979	530	130	370	363	31	1
1980	865	113	744	44	90	3
1981	485	128	357	144	71	2
1982	604	499	360	43	483	3
1983	853	602	557	685	260	1
1984	653	705	578	166	255	19
1985	363	718	513	803	273	9
1986	491	678	1,011	275	1,252	11
1987	496	494	974	728	1,026	3
1988	392	399	582	551	1,572	10
1989	262	972	719	892	1,237	6

TABLE 22 - AVERAGE WHOLESALE PRICE OF FRESH DRESSED SALMON BY YEAR 1978 - 1989[1]

($/kg)

	CHINOOK	SOCKEYE	COHO	PINK	CHUM	STEELHEAD
1978	5.31	5.86	5.23	2.34	4.54	3.73
1979	6.50	5.72	6.17	1.81	5.07	4.41
1980	5.43	4.62	5.14	2.93	3.35	4.23
1981	6.46	5.76	5.68	2.62	3.41	4.49
1982	6.92	4.99	4.78	2.73	3.62	3.97
1983	6.29	4.75	4.49	2.30	3.06	4.62
1984	8.03	6.08	6.24	2.40	3.96	5.87
1985	7.89	6.87	5.79	2.73	3.14	5.17
1986	6.46	8.11	5.74	2.74	2.72	5.85
1987	9.00	9.05	7.32	3.79	4.70	4.75
1988	9.42	11.87	6.87	3.76	5.18	5.38
1989	6.04	7.62	4.36	2.70	3.39	4.89

1 Includes both head-on and head-off products. See Table 17 for 1989 average prices of head-on and head-off products. Excludes farm raised salmon.

TABLE 23 - QUANTITY AND WHOLESALE VALUE OF BRITISH COLUMBIA HOT, COLD AND SPECIALTY SMOKED SALMON - 1989[1]

	HOT SMOKED			COLD SMOKED			SPECIALTY SMOKED			TOTAL[3]		
SPECIES	Tonnes	$'000	Avg.$/kg[2]	Tonnes	$'000	Avg.$/kg[2]	Tonnes	$'000	Avg.$/kg[2]	Tonnes	$'000	Avg.$/kg[2]
Chinook	15	153	10.20	165	3,660	22.18	4	88	22.00	184	3,901	21.20
Sockeye	6	56	9.33	381	9,572	25.12	11	293	26.64	398	9,921	24.93
Coho	11	89	8.09	30	748	24.93	1	28	28.00	42	865	20.60
Pink	3	29	9.67	10	154	15.40	11	263	23.91	24	446	18.58
Chum	58	457	7.88	135	2,002	14.83	34	668	19.65	227	3,127	13.78
Steelhead	*	*	2.32	*	*	10.39	-	-	-	*	*	-
TOTAL[3]	93	784	-	721	16,136	-	61	1,340	-	875	18,260	-

1 Does not include smoked farmed salmon.
2 Value divided by quantity may not equal average price due to rounding.
3 Product totals do not include confidential data.

* Confidential. Fewer than three companies reporting.

B) HERRING

In 1989, total herring landings increased 16 percent from 31,601 tonnes to 41,008 tonnes. The total landed value however dropped by 21 percent over the same period, from $96.5 million to $76.3 million.

Specifically, roe herring landings rose significantly from 30,070 tonnes in 1988 to 40,423 tonnes, an increase of 34 percent. The corresponding landed value however fell by 20 percent from $95.1 million to $75.8 million. Food and bait herring landings showed a significant decline in 1989, from 1,531 to 585 tonnes, a 62 percent drop. This large change in landings appears to be the result of decreased participation in the winter food and bait herring fishery. The landed value for food and bait also dropped dramatically from $1.3 million to $0.5 million, a decrease of 61 percent.

Despite the large drop in the total landed value in 1989, the total wholesale value of all herring products only declined 10 percent to $157.8 million. The wholesale value of herring roe production was $154.5 million, down significantly from 1988. This was due primarily to the decline in the average wholesale price of roe which fell from $33.93/kg to $24.47/kg, a decline of 28 percent.

Combined roe herring production, including herring meal, oil and spawn on kelp, accounted for about 97 percent of the total wholesale value of herring production for the sixth consecutive year. The wholesale value of herring frozen for food was $66 thousand while bait was valued at $2.0 million. Frozen food and bait herring in 1989 accounted for about 2 percent, as it has for the past seven years. The value of other herring products, including fresh, kippered snacks, dry-salted, and pickled, totalled $1.3 million or 1 percent of the total.

TABLE 24 - ROE HERRING LANDINGS AND WHOLESALE VALUE OF ROE HERRING PRODUCTS 1978 - 1989

	LANDINGS[1] (Tonnes)	LANDED VALUE[1] ($'000)	.....WHOLESALE VALUE..... ROE ($'000)	SPAWN ON KELP ($'000)	FROZEN FOR ROE ($'000)	TOTAL VALUE[3] ($'000)
1978	63,408	52,933	130,743	2,521	3,979	141,508
1979	37,480	126,866	182,304	5,011	5,163	195,387
1980	16,414	26,357	33,074	2,448	1,058	38,297
1981	29,486	35,928	69,946	3,308	-[2]	74,198
1982	27,658	35,479	76,963	3,900	-	83,057
1983	39,155	52,902	98,094	6,455	-	107,946
1984	32,795	43,645	88,090	4,508	-[2]	96,058
1985	24,588	62,050	91,792	5,699	-	100,115
1986	15,732	45,610	77,474	6,372	-	85,454
1987	37,029	106,824	155,074	10,444	-	170,132
1988	30,070	95,117	155,158	12,934	-	171,860
1989	40,423	75,794	140,790	8,711	-	154,484

1 Includes spawn on kelp.
2 Confidential - fewer than three companies reporting. Included in the total wholesale value.
3 Includes roe herring by-products.

TABLE 25 - FOOD AND BAIT HERRING LANDINGS AND WHOLESALE VALUE OF FOOD AND BAIT HERRING PRODUCTS 1978 - 1989

	LANDINGS (Tonnes)	LANDED VALUE ($'000)	.....WHOLESALE VALUE..... FROZEN FOR FOOD ($'000)	BAIT ($'000)	TOTAL VALUE[1] ($'000)
1978	18,145	4,194	9,484	1,420	13,523
1979	6,181	2,131	3,204	2,133	6,546
1980	8,909	2,891	7,207	1,597	9,919
1981	8,663	2,177	5,516	1,480	8,253
1982	1,117	450	1,010	1,463	3,391
1983	892	491	418	1,838	3,104
1984	1,080	720	125	1,920	2,898
1985	1,367	1,055	68	2,012	3,017
1986	759	599	256	1,494	2,833
1987	780	528	545	1,945	3,518
1988	1,531	1,340	178	2,212	3,676
1989	585	526	66	1,973	3,298

1 Includes other food and bait herring products.

C) HALIBUT

The total halibut catch by British Columbia fishermen was 4,659 tonnes, valued at $18.7 million. The catch originating in Canadian waters and delivered to British Columbia ports decreased by 23 percent in 1989 from 5,048 tonnes to 3,893 tonnes. In addition to these landings, 766 tonnes of halibut valued at $3,589,706 was caught in Canadian waters and delivered by Canadian fishermen to U.S. ports. This compares to 818 tonnes, worth approximately $3.5 million, delivered to U.S. ports in the preceding year. The landed value of the catch delivered to British Columbia ports dropped, from $19.7 to $15.1 million, a decrease of 23 percent. This comparable decrease in landed quantity and value reflects stability in landed prices. In 1989, the average landed price was virtually identical to the previous year at $3.88/kg.

The total wholesale value of halibut processed in British Columbia was $27.4 million in 1989, 2 percent above the 1988 value. Including halibut landed by B.C. fishermen and delivered to U.S. ports, the total 1989 wholesale value was up marginally from $30.3 million in 1988 to $31.0 million. Frozen dressed halibut was still a major product marketed with a wholesale value of $9.4 million, accounting for 34 percent of the total wholesale value of halibut. However, fresh dressed halibut has continued its recent trend, with a value of $15.7 million, to increase its value share of halibut production from 45 percent to 57 percent. Halibut fillets, steaks and "other" products were also processed.

TABLE 26 - LANDINGS AND WHOLESALE VALUE OF HALIBUT IN B.C.[1]

1978 - 1989

	TOTAL LANDINGS (Tonnes)	LANDED VALUE ($'000)	AVG.LANDED PRICE ($/kg)	WHOLESALE VALUE ($'000)
1978	2,294	10,001	4.36	12,827
1979	2,410	14,004	5.81	17,692
1980	2,668	7,341	2.75	9,962
1981	2,233	6,592	2.95	10,548
1982	1,690	4,715	2.79	5,488
1983	1,865	6,381	3.42	9,268
1984	3,110	7,222	2.32	11,640
1985	3,687	10,704	2.90	15,723
1986	4,201	18,765	4.47	25,521
1987	4,751	24,310	5.12	33,881
1988	5,048	19,703	3.90	26,766
1989	3,893	15,106	3.88	27,401

1 Not including Canadian landings of halibut in Alaska and Washington.

D) GROUNDFISH

Domestic groundfish landings were down 4 percent in 1989, from 65,562 tonnes to 62,914 tonnes. The landed value decreased 13 percent from $51.7 million to $45.1 million. The landed values of many species of groundfish showed decreases, most noteable were dogfish, Pacific cod and Pacific Ocean perch. Species exhibiting increases in landed value were soles, lingcod, turbot, flounder and most significantly, hake and other groundfish. Included in "other groundfish" are idiotfish, shark and some non-food fish.

The total wholesale value of groundfish production increased very slightly in 1989, from $85.9 million to $86.2 million. The wholesale values of many species of groundfish decreased. The exceptions were sole, flounder, lingcod, turbot, hake and other groundfish which showed a minor increase. Soles and other groundfish displayed significant increases in wholesale value, rising from $9.4 million in 1988 to $10.4 million and from $4.4 million to $9.1 million respectively. The wholesale value of sablefish fell for the first time in many years from $20.6 million in 1988 to $17.7 million, a decrease of 14 percent. Although down slightly, rockfish remained relatively constant in value and accounted for 29 percent of the total groundfish wholesale value. It should be noted that a small amount of processed product was derived from imported groundfish.

TABLE 27 - COMPARATIVE WHOLESALE VALUES OF MAJOR GROUNDFISH SPECIES

1987 - 1989

	1987 ($'000)	1988 ($'000)	1989 ($'000)
Sole	5,752[4]	9,418	10,436
Rockfish[1]	28,910[4]	28,836	25,324
Pacific Cod	17,284	10,974	10,078
Ling Cod	7,569	4,957	7,735
Sablefish	16,953	20,566	17,725
Flounder	90	121	176
Skate	399[4]	230	172
Pollock	3,974[4]	1,060	1,016
Turbot	1,358[4]	260	609
Hake[2]	2,247[4]	983	1,175
Dogfish	2,464	4,041	2,612
Other Groundfish[3]	7,864	4,406	9,120
TOTAL	94,864[4]	85,852	86,178

1 Includes Pacific ocean perch, red snapper and other rockfish.
2 Excludes over-the-side sales to foreign vessels in co-operative fishing arrangements.
3 Includes other groundfish, portions, sticks and specialties, and groundfish meal and oil.
4 Revised data.

TABLE 28 - JOINT-VENTURE OR COOPERATIVE SALES OF PACIFIC HAKE TO FOREIGN NATIONS BY YEAR[1]
(1978 - 1989)

	POLAND		SOVIET UNION		GREECE		KOREA		JAPAN		TOTAL	
	Tonnes	$'000	Tonnes	$'000	Tonnes	$'000	Tonnes	$'000	Tonnes	$'000	Tonnes	$'000
1978	1,814	240	-	-	-	-	-	-	-	-	1,814	240
1979	3,102	445	1,131	162	-	-	-	-	-	-	4,233	607
1980	4,560	739	4,300	614	3,355	609	-	-	-	-	12,215	1,962
1981	4,998	826	7,232	1,190	4,929	894	-	-	-	-	17,159	2,910
1982	10,279	1,714	9,397	1,550	-	-	-	-	-	-	19,676	3,264
1983	13,465	2,270	14,192	2,363	-	-	-	-	-	-	27,657	4,633
1984	9,214	1,609	19,692	3,044	-	-	-	-	-	-	28,906	4,653
1985	13,306	2,248	-	-	-	-	-	-	-	-	13,306	2,248
1986	13,494	1,962	16,642	2,417	-	-	-	-	-	-	30,136	4,379
1987	26,514	4,260	18,231	2,930	-	-	2,856	459	-	-	47,601	7,649
1988	26,673	4,358	22,253	3,458	-	-	-	-	1,048	174	49,974	7,990
1989	26,252	4,174	26,870	4,144	-	-	-	-	12,980	1,908	66,102	10,225

1 Does not include domestic hake catch or national allocations to the Soviet Union, Poland and Japan.

British Columbia domestic hake landings do not include cooperative fishing arrangements with foreign nations. In 1989, 66,102 tonnes worth approximately $10.2 million were purchased by the Soviet Union, Poland and Japan from Canadian fishermen.

Totals may not add, due to rounding.

E) SHELLFISH

Shellfish landings decreased slightly from 23,116 tonnes in 1988 to 21,237 tonnes. The harvest of most species was very similar to the previous year. The only shellfish species to show significant changes in reported landings in 1989 were geoducks, clams, sea urchins and other shellfish. The total landed value was up from $41.4 million to $45.2 million, an increase of 9 percent. The landed values for all species, except clams, rose despite some species showing a drop in landed weight. Most noteable, geoduck, despite a decrease in harvest, rose by 28 percent in landed value over 1988.

The total wholesale value of shellfish production increased by less than 1 percent from $72.2 million to $72.3 million in 1989. Most species remained at very similar levels to 1988. Clams, including geoducks, accounted for 37 percent of the total wholesale value of shellfish, crab 12 percent, shrimp and prawns 17 percent, sea urchins 17 percent and oysters 6 percent. Abalone, mussels, octopus, scallops, sea cucumbers, squid and gooseneck barnacles accounted for the remaining 11 percent. The value of sea urchin products remained high, although down slightly from 1988 but a significant portion of this originated from outside B.C. waters. Prawn products showed a marked increase in value, rising 53% from 1988, despite a 14 percent increase in harvest.

TABLE 29 - COMPARATIVE WHOLESALE VALUES OF MAJOR SHELLFISH SPECIES

1987 - 1989

SPECIES	1987 ($'000)	1988 ($'000)	1989 ($'000)
Abalone	873	1,059	1,222
Clams[1]	10,243	12,748	11,341
Geoducks	12,265	16,066	15,275
Crabs	9,025[2]	9,196	8,619
Octopus	275	561	527
Oysters	3,713	3,982	4,340
Shrimp	6,977	6,269	6,494
Prawns	4,551	5,769	8,844
Squid	801[3]	120[3]	*
Mussels	80	15	*
Scallops	239	289	324
Sea Cucumbers	1,490	1,994[6]	1,774[6]
Sea Urchins[4]	4,929	13,467	12,198
Gooseneck Barnacles	-	664	702
Other	538[5]	-	648[7]
TOTAL	55,999	72,199	72,308

1 Includes horse clams.
2 Includes products derived from imported crabs.
3 Includes products derived from squid originating outside of B.C. waters.
4 Includes product derived from imported sea urchins.
5 Includes gooseneck barnacles and other shellfish n.e.s.
6 Includes product derived from imported sea cucumbers.
7 Includes squid, mussels, plankton and other shellfish n.e.s.
* Confidential. Less than 3 companies reporting.

F) AQUACULTURE PRODUCTION

SUMMARY OF THE B.C. AQUACULTURE INDUSTRY

The mid 1980's was the beginning of a boom period for the salmon farming industry on the British Columbia coast. By the end of 1989 there were 230 salmon farms approved for operation in B.C., an 11 percent increase from 1988. Of these, only approximately 134 farms were in actual operation. A total of 108 operating sites reported food market sales in 1989. Thirty four percent of these farms were located in the Sunshine Coast area, but the trend is for a larger concentration of farms in the North Georgia Strait area and along the west coast of Vancouver Island. In 1989, a total of 21 percent of the farms were located in the Campbell River area. Production in 1989 was 11,883 tonnes, with a reported value of $59.7 million to the farmer. This is an 80 percent increase in the quantity and a 53 percent increase in value of production from 1988. It should be noted that quantities for 1987, 1988 and 1989 are reported in estimated round weight equivalents.

In 1989, the shellfish industry was comprised of 408 active tenures utilizing 1,594 hectares of foreshore. These figures represent a minor decrease in leased area and in numbers of growers from the previous year. The majority of these farms utilize off-bottom culture technology. This trend is likely to continue and expand as suitable intertidal ground is very limited. Oyster farms, which comprise the majority of shellfish aquaculture operations, are currently distributed along the east and west coast of Vancouver Island and the Sunshine Coast, with the greatest production achieved in the Baynes Sound area of Vancouver Island.

Pacific oyster production amounted to 3,721 tonnes in 1989, with a reported value to the producers of $2.9 million. This is a 1 percent increase in production from 1988 and a 3 percent increase in value. The clam industry reported 31 tonnes of production in 1989 valued at $96 thousand to the producer which represents a one percent increase in tonnage and a 63 percent increase in value. Mussel production continued to decline in 1989, indicating that more research is required in British Columbia to make this a viable industry.

The trout farming sector consisted of 168 commercial trout farmers in 1989. Rainbow trout production for the food market was 86 tonnes, with a reported value of $374 thousand. This is a 24 percent decrease in production and a 26 percent decline in total value from 1988. Only 20 percent of all farmers produced product for the table market, the remaining 80 percent sold live fish to other farmers for grow-out, operated U-catch-em ponds, or reported no production at all. Most freshwater trout farms are located on private land and are not subject to the same land tenure process and requirements as are fish farms located on Crown land.

TABLE 30 - AQUACULTURE PRODUCTION IN BRITISH COLUMBIA - 1982-1989

		1982	1983	1984	1985	1986	1987	1988	1989
MARINE PEN REARED SALMONIDS	Tonnes	273	128	107	120	400	1,931[1]	6,590	11,183
	$'000	1,136	708	702	820	2,728	12,872[1]	39,084	59,739
TROUT	Tonnes	74	77	71	83	101	90[1]	113	86
	$'000	n/a	441	433	435	569	442[1]	505	374
CARP	Tonnes	n/a	14	11	9	*	4[1]	10	*
	$'000	n/a	n/a	n/a	23	*	14[1]	20	*
OYSTERS	Tonnes	1,579	2,453	2,897	3,420	2,864	3,482	3,702	3,721
	$'000	981	1,554	2,109	2,163	2,515	2,548	2,725	2,938
MUSSELS	Tonnes	-	-	-	n/a	6	14	*	*
	$'000	-	-	-	4	16	36	*	*
CLAMS	Tonnes	-	-	-	4	7	25	30	31
	$'000	-	-	-	4	14	43	59	96
SCALLOPS	Tonnes	-	-	-	-	-	*	*	*
	$'000	-	-	-	-	-	*	*	*
ABALONE	Tonnes	-	-	-	n/a	n/a	*	n/a	n/a
	$'000	-	-	-	n/a	n/a	*	n/a	n/a
MARINE PLANTS	Tonnes	n/a	n/a	*	*	*	*	*	*
	$'000	n/a	n/a	*	*	*	*	*	*

* Confidential. Fewer than three companies reporting.
1 Revised data.

1. SALMON

In 1989, 78 salmon farming companies reported production totalling 11,883 tonnes worth $59.7 million. This represents approximately an eighty percent increase in quantity and a 53 percent increase in value from 1988. Production is expected to continue to increase but not at the rate of recent years. Much of the industry has undergone some consolidation and a number of companies have changed their mix of species.

In 1989, the fourth year in which they have been were marketed, a total of 274 tonnes of marine-reared rainbow trout were produced with a value of $1 million. A significant part of the industry marketed their Atlantic salmon for the first time in 1989, thus resulting in a change in species concentration. Chinook salmon accounted for 72 percent of the production, coho, Atlantics, and steelhead/rainbow trout accounted for 15, 11, and 2 percent of the production, respectively. This is the second year in which marine pen-reared Atlantic salmon production has been reported with 1,280 tonnes worth $8.0 million. This represents a tremendous increase in production from last year's total of 80 tonnes valued at $592 thousand.

About 96 percent of salmon production was targetted to the fresh market, an increase from 1988. In 1989, although there was a greater diversification of product types, there was a return to the more traditional product mix. The total wholesale product value of all farmed salmon products was 21 percent above the farm value.

TABLE 31 - BRITISH COLUMBIA SALMONID MARICULTURE PRODUCTION - 1979 - 1989[1]

	COHO		CHINOOK		STEELHEAD/ RAINBOW TROUT		ATLANTIC		TOTAL PRODUCTION	
	(Tonnes)	($'000)	(Tonnes)	($'000)	(Tonnes)	($'000)	(Tonnes)	($'000)	(Tonnes)	($'000)
1979	41	157	-	-	-	-	-	-	41	157
1980	157	898	-	-	-	-	-	-	157	898
1981	176	985	-	-	-	-	-	-	176	985
1982	230	908	43	228	-	-	-	-	273	1,136
1983	73	350	55	358	-	-	-	-	128	708
1984	64[2]	306	43	396	-	-	-	-	107	702
1985	66[2]	395	54	425	-	-	-	-	120	820
1986	304	2,014	87	642	9[3]	72	-	-	400	2,728
1987[4]	790	4,990	949	7,018	192[3]	864	-	-	1,931	12,872
1988[5]	2,775	14,035	3,550	23,540	185	917	80	592	6,590	39,084
1989[5]	1,815	8,012	8,514	42,617	274	1,061	1,280	8,049	11,883	59,739

1 Source: British Columbia Annual Fisheries Production Statistics and British Columbia Commercial Fish Farm Statistics.
2 Includes an unspecified amount of marine pen-reared rainbow trout.
3 Includes an unspecified amount of "other" species.
4 Revised data, and quantities are reported in round weight.
5 Quantities are reported in round weight.

TABLE 32 - PRODUCTION AND UTILIZATION OF MARINE PEN-REARED (FARMED) SALMON BY SPECIES - 1989

	FRESH DRESSED Head-On/Head-Off			FROZEN DRESSED Head-On/Head Off			FROZEN STEAKS AND FILLETS			HOT and COLD SMOKED			TOTAL[1]	
	000kg	$'000	$/kg	000kg	$'000	$/kg	000kg	$'000	$/kg	000kg	$'000	$/kg	000kg	$'000
Chinook	7,340	46,932	6.39	121	579	4.79	283	2,657	9.39	114	2,184	19.18	7,858	52,352
Coho	1,596	7,902	4.95	121	618	5.11	60	545	9.08	11	199	18.09	1,788	9,264
Steelhead	243	1,259	5.18	*	*	3.33	-	-	-	*	*	24.50	243	1,259
Atlantic	1,209	8,584	7.10	*	*	5.34	-	-	-	-	-	-	1,209	8,584
TOTAL	10,388	64,677	-	242	1,197	-	343	3,202	-	125	2,383	-	11,098	71,459[1]

* Confidential, less than 3 companies reporting.

1 Excludes a small amount of "other" farmed salmon products, freshwater trout and Arctic char and confidential items with a combined wholesale value of $959 thousand.

2. OYSTERS

Shellfish aquaculture in British Columbia is primarily based on the Pacific oyster. In 1989, total production for this species was 3,721 tonnes, a 19 tonne increase from 1988.

The use of hatchery produced eyed larvae for seed production has now almost completely replaced the collection of wild seed. The majority of eyed larvae continued to be imported from the United States.

The landed value, which shows an 8 percent increase over the past year, primarily reflects a moderate increase in the "farm gate" selling price and the increased percentage of half-shell products. The total wholesale value of all oyster products showed a modest 9 percent increase over 1988, from $4.0 million to $4.3 million.

The major growth area in oyster culture over recent years has been in half-shell production. In 1989, sales dropped slightly to 430,000 dozen from 439,000 dozen in 1988. This may indicate that a balance in product mix has been reached although an increase in the future may occur as new growers come on stream or established growers continue to expand.

TABLE 33 - BRITISH COLUMBIA OYSTER PRODUCTION - 1975 - 1989

	Production[1,2] (Tonnes)	Landed Value[3] ($'000)
1975	3,246	883
1976	3,245	887
1977	2,998	981
1978	2,793	1,021
1979	2,231	893
1980	1,922	1,134
1981	1,415	1,030
1982	1,579	981
1983	2,453	1,554
1984	2,897	2,109
1985	3,420	2,613
1986	2,864	2,515
1987	3,482	2,548
1988	3,702	2,725
1989	3,721	2,938

1 1975-1980 production data was provided by the Department of Fisheries and Oceans and 1981 - 1989 data was provided by the Aquaculture Operations Section, Ministry of Agriculture, Fisheries and Food.

2 Includes a small amount of wild oyster harvest from picking permits, after 1980.

3 The landed value from 1987 onward is relatively lower than previous years as it more accurately reflects a "farm gate" selling price.

3. FRESHWATER TROUT

The trout aquaculture industry reported a total of 86 tonnes of market sales in 1989, representing a 24 percent decrease from 1988. The total value of these sales decreased 26 percent from $505 thousand to $374 thousand. This does not include approximately 9 tonnes from U-catch-em (Fee Fishing), valued at $92 thousand.

The majority of trout was marketed as a fresh dressed head-on product accounting for about 86 percent of the production. The remainder was either sold live, fresh dressed head-off, or as frozen product, both head-on and head-off.

There were 168 freshwater commercial licence holders in 1989, however, 113 reported no sales whatsoever. Only 20 percent of the licence holders reported any food market sales, and much of that was concentrated among six farmers who reported 62 percent of the production.

TABLE 34 - BRITISH COLUMBIA FRESHWATER TROUT FARM PRODUCTION

1979 - 1989

	Production[1] (Tonnes)	Value ($'000)
1979	53	n/a
1980	56	n/a
1981	71	n/a
1982	74	n/a
1983	77	441
1984	71	433
1985	83	435
1986	101	569
1987[2]	90	442
1988	113	505
1989	86	374

1 Food Market Sales 1979 - 1985 data was provided by the Ministry of Environment and Parks, Fisheries Branch, in "B.C. Commercial Fish Farm Statistics".

2 Revised data.

G) MAJOR SPECIES BY PRODUCT TYPE

The following table "Landings and Products Processed in B.C. - 1989" is one of the cornerstones of the Fisheries Production Statistics of British Columbia. For each species, a summary of catch and landed value data is provided, along with data on the final quantity, wholesale value and average wholesale price for each product type. Virtually all tables throughout the report utilize data from this table.

TABLE 35 - LANDINGS AND PRODUCTS PROCESSED IN B.C. - 1989[1]

SPECIES	QUANTITY (Tonnes)	VALUE ($'000)	AVG. PRICE[2] ($/KG)
ABALONE			
Landed	48	1,151	24.07
Processed:			
In Shell	31	790	25.11
Other[3]	-	432	-
Total Wholesale Value	-	1,222	-
CLAMS			
Butter Clams Landed[4]	-	-	-
Processed:			
Meat, Fresh or Frozen[5]	48	185	3.86
Other	-	36	-
Total Wholesale Value	-	221	-
Geoduck Clams Landed	3,965	12,572	3.17
Processed:			
Live	974	4,205	4.32
Neck Meat	581	9,528	16.40
Body Meat	347	1,105	3.18
Other	-	437	-
Total Wholesale Value	-	15,275	-
Littleneck Clams Landed[4]	-	-	-
Processed:			
Fresh	2,457	8,687	3.53
Frozen	140	316	2.25
Total Wholesale Value	-	9,003	-
Other Clams Landed[6]	3,682	7,100	1.93
Processed:			
Fresh or Frozen[7]	501	1,602	3.20
Other	-	515	-
Total Wholesale Value	-	2,117	-
CRABS			
Landed	1,522	6,089	4.00
Processed:			
In Shell, Fresh	976	6,417	6.58
In Shell, Frozen	17	75	4.44
Meat, Fresh	63	1,375	21.93
Meat, Frozen	8	152	18.07
Cooked[8]	75	600	8.00
Total Wholesale Value	-	8,619	-

TABLE 35 - CONT'D

SPECIES	QUANTITY (Tonnes)	VALUE ($'000)	AVG. PRICE[2] ($/KG)
DOGFISH			
Landed	2,775	1,022	0.37
Processed:			
Fresh Round	1,695	623	0.17
Flaps	132	445	3.37
Backs	643	1,128	1.75
Fins & Tails	35	222	6.33
Other[9]	-	194	-
Total Wholesale Value	-	2,612	-
EULACHONS			
Landed	19	18	0.96
Processed:			
Fresh	8	11	1.30
Frozen	9	13	1.38
Total Wholesale Value	-	24	-
FLOUNDER			
Landed	124	73	0.59
Processed:			
Fresh Round	9	8	0.85
Fillets, Fresh	23	108	4.73
Fillets, Frozen[10]	23	60	2.57
Total Wholesale Value	-	176	-
GOOSENECK BARNACLES			
Landed	45	506	11.24
Processed:			
Fresh	40	702	17.65
Total Wholesale Value	-	702	-
GREY/PACIFIC COD			
Landed	9,142	4,519	0.49
Processed:			
Fresh Round	564	371	0.66
Fresh Dressed	41	151	3.73
Frozen Dressed	30	95	3.16
Fillets, Fresh	1,967	7,253	3.69
Fillets, Frozen	197	629	3.20
Roe	10	13	1.36
Other[11]	-	1,566	-
Total Wholesale Value	-	10,078	-
HAGFISH			
Landed	829	1,576	1.90
Processed:			
Frozen	436	839	1.93
Total Wholesale Value	-	839	-

TABLE 35 - CONT'D

SPECIES	QUANTITY (Tonnes)	VALUE ($'000)	AVG. PRICE[2] ($/KG)
HAKE			
Landed (B.C. Ports)	8,604	1,108	0.13
Processed:			
Fresh Round[12]	8,541	1,175	0.14
Total Wholesale Value	-	1,175	-
HALIBUT			
Landed (B.C. Ports)[13]	3,893	15,106	3.88
Processed:			
Fresh Dressed	3,126	15,710	5.03
Frozen Dressed	1,900	9,390	4.94
Fillets, Fresh	13	86	6.69
Fillets, Frozen	57	676	11.87
Steaks, Frozen	97	791	8.19
Other[14]	-	748	-
Total Wholesale Value	-	27,401	-
HERRING			
Landed[15]	41,008	76,320	1.86
Processed:			
Bait, Fresh or Frozen	793	1,973	2.49
Frozen for Food	83	66	0.80
Body and Offal Oil	571	257	0.45
Body and Offal Meal	4,860	4,643	0.96
Roe[16]	5,753	140,790	24.47
Spawn on Kelp	213	8,711	40.90
Other[17]	-	1,342	-
Total Wholesale Value	-	157,782	-
LING COD			
Landed	3,980	2,869	0.72
Processed:			
Fresh Round	348	303	0.87
Fresh Dressed	375	853	2.28
Frozen Dressed	215	501	2.33
Fillets, Fresh	674	2,515	3.73
Fillets, Frozen	301	1,092	3.62
Other[18]	-	2,471	-
Total Wholesale Value	-	7,735	-
OCTOPUS			
Landed	217	703	3.23
Processed:			
Fresh	35	144	4.08
Frozen	40	192	4.76
Bait	57	191	1.52
Total Wholesale Value	-	527	-

TABLE 35 - CONT'D

SPECIES	QUANTITY (Tonnes)	VALUE ($'000)	AVG. PRICE[2] ($/KG)
OYSTERS			
Landed	3,721	2,938	0.79
Processed:			
Half Shell (dozens)	430,062	1,455	3.38
Meat, Fresh, 8 oz.	40	372	9.21
Meat, Fresh, 16 oz.	9	72	8.43
Meat, Fresh, 32 oz.	269	2,121	7.90
Meat, Fresh, 128 oz.	19	164	8.59
Other[19]	-	156	-
Total Wholesale Value	-	4,340	-
PACIFIC OCEAN PERCH			
Landed	6,068	2,889	0.48
Processed:			
Fresh Round	1,241	808	0.65
Fillets, Fresh	398	1,375	3.45
Fillets, Frozen	172	593	3.45
Other[20]	-	316	-
Total Wholesale Value	-	3,092	-
POLLOCK			
Landed	434	63	0.15
Processed:			
Fresh Round	284	45	0.16
Fillets, Fresh	3	10	3.13
Roe	3	31	9.06
Other[21]	-	930	-
Total Wholesale Value	-	1,016	-
PRAWNS			
Landed	820	7,083	8.64
Processed:			
Fresh	420	4,092	9.74
Frozen	194	2,201	11.33
Tails	71	1,307	18.38
Whole, Frozen, Cooked	82	1,244	15.09
Total Wholesale Value	-	8,844	-
RED SNAPPER			
Landed[22]	-	-	-
Processed:			
Fresh Round	508	1,163	2.29
Fresh Dressed	16	17	1.09
Frozen Dressed	98	195	2.00
Fillets, Fresh	400	1,228	3.07
Fillets, Frozen	53	176	3.32
Other[23]	-	154	-
Total Wholesale Value	-	2,933	-

TABLE 35 - CONT'D

SPECIES	QUANTITY (Tonnes)	VALUE ($'000)	AVG. PRICE[2] ($/KG)
ROCKFISH			
Landed	18,388	12,104	0.66
Processed:			
Fresh Round	4,410	4,698	1.07
Fresh Dressed	40	71	1.76
Frozen Dressed	353	946	2.68
Fillets, Fresh	3,261	11,347	3.48
Fillets, Frozen	802	2,211	2.76
Other[24]	-	26	-
Total Wholesale Value	-	19,299	-
SABLEFISH			
Landed	5,494	15,058	2.74
Processed:			
Fresh Round	116	280	2.42
Fresh Dressed	36	140	3.93
Frozen Dressed, Japanese Cut	3,315	16,002	4.83
Frozen Dressed, Western Cut	135	672	4.99
Fresh and Frozen Fillets	33	108	3.32
Smoked, Dressed	54	476	8.88
Smoked Fillets[25]	5	47	9.60
Total Wholesale Value	-	17,725	-
SALMON			
Landed[26]	84,894	256,100	3.02
Processed:[27]			
Fresh Round	1,344	4,793	3.56
Frozen Round	437	829	1.90
Fresh Dressed	4,088	18,810	4.60
Frozen Dressed	30,193	187,166	6.22
Frozen Fillets & Steaks	253	2,446	9.64
Salted[28]	427	4,452	10.43
Smoked[29]	876	18,274	20.81
Canned (48 lb. cases)	1,745,716	337,519	193.34
Portion Pack/Specialty Products	200	2,708	13.53
Caviar	130	3,386	26.14
Roe[30]	486	4,365	8.98
Other[31]	-	2,132	-
Total Wholesale Value	-	586,880	-

TABLE 35 - CONT'D

SPECIES	QUANTITY (Tonnes)	VALUE ($'000)	AVG. PRICE[2] ($/KG)
MARINE PEN-REARED (FARMED) SALMON			
Landed	11,883	59,739	5.03
Processed:[32]			
Round	76	279	3.67
Fresh Dressed	10,388	64,677	6.23
Frozen Dressed	244	1,208	4.95
Frozen Steaks & Fillets	343	3,207	9.35
Smoked	132	2,518	19.08
Minced	28	159	5.68
Other[33]	-	370	-
Total Wholesale Value	-	72,418	-
SCALLOPS			
Landed	75	315	4.20
Processed:			
In Shell, Fresh	56	284	5.05
In Shell, Frozen	7	40	5.36
Total Wholesale Value	-	324	-
SEA CUCUMBERS			
Landed	1,143	901	0.79
Processed:[34]			
Fresh	2	3	1.36
Meat	114	1,587	13.96
Skins	38	184	4.89
Total Wholesale Value	-	1,774	-
SEA URCHINS, GREEN			
Landed	611	1,020	1.67
Processed:[35]			
Whole	480	1,533	3.19
Roe in trays	3	79	30.69
Other[36]	-	17	-
Total Wholesale Value	-	1,629	-
SEA URCHINS, RED			
Landed	2,657	1,631	0.61
Processed:[35]			
Roe in trays	383	9,881	25.83
Roe, bulk	54	685	12.80
Other[37]	-	3	-
Total Wholesale Value	-	10,569	-
SHRIMP			
Landed	2,299	2,817	1.23
Processed:			
Fresh	737	2,540	3.44
Frozen	21	131	6.28
Shrimp Meat, Fresh	242	2,500	10.32
Shrimp Meat, Frozen	144	1,322	9.19
Other[38]	-	1	-
Total Wholesale Value	-	6,494	-

TABLE 35 - CONT'D

SPECIES	QUANTITY (Tonnes)	VALUE ($'000)	AVG. PRICE[2] ($/KG)
SKATE			
Landed	353	45	0.13
Processed:			
Fresh	11	12	1.06
Frozen	16	25	1.63
Wings, skin on	14	27	1.97
Wings, skinless	51	107	1.06
Other[39]	-	1	-
Total Wholesale Value	-	172	-
SOLE			
Dover Sole Landed[40]	-	-	-
Processed:			
Fresh Round	765	577	0.75
Frozen Round	14	18	1.35
Fillets, Fresh	190	983	5.17
Fillets, Frozen	39	177	4.57
Total Wholesale Value	-	1,755	-
English Sole Landed[40]	-	-	-
Processed:			
Fresh Round	71	61	0.85
Frozen Round	16	24	1.48
Fillets, Fresh	143	836	5.82
Fillets, Frozen	47	221	4.75
Total Wholesale Value	-	1,142	-
Petrale Sole Landed[40]	-	-	-
Processed:			
Fresh Round	64	157	2.45
Frozen Round	60	170	2.84
Fillets, Fresh	170	1,594	9.39
Fillets, Frozen	24	138	5.73
Total Wholesale Value	-	2,059	-
Rock Sole Landed[40]	-	-	-
Processed:			
Fresh Round	219	229	1.05
Dressed, Fresh/Frozen	2	7	3.22
Fillets, Fresh	259	1,472	5.68
Fillets, Frozen	166	786	4.74
Other[41]	-	29	-
Total Wholesale Value	-	2,523	-

TABLE 35 - CONT'D

SPECIES	QUANTITY (Tonnes)	VALUE ($'000)	AVG. PRICE[2] ($/KG)
Other Sole Landed	6,352	4,798	0.76
Processed:			
Fresh Round	52	55	1.06
Frozen Round	91	171	1.87
Dressed, Fresh/Frozen	17	107	6.14
Fillets, Fresh	354	1,998	5.65
Fillets, Frozen	99	500	5.07
Other[42]	-	126	-
Total Wholesale Value	-	2,957	-
STURGEON			
Landed	9	16	1.86
Processed:			
Fresh	6	24	3.95
Other[43]	-	5	-
Total Wholesale Value	-	29	-
TUNA			
Landed (B.C. Ports)[44]	145	380	2.62
Processed:			
Fresh	45	138	3.07
Frozen	146	439	3.01
Other[45]	-	17	-
Total Wholesale Value	-	594	-
TURBOT			
Landed	609	116	0.19
Processed:			
Round, Fresh	108	106	0.98
Fillets, Fresh	2	5	3.19
Fillets, Frozen	198	498	2.52
Total Wholesale Value	-	609	-
MISCELLANEOUS FISH			
Landed[46]	1,030	771	0.75
Processed:			
Other Products[47]	-	9,851	-
Total Wholesale Value	-	9,851	-

TABLE 35 - CONT'D - FOOTNOTES

1 Any discrepancy in value figures is due to rounding.
2 Average price is based on totals prior to rounding.
3 Includes meat, fresh and other abalone products.
4 Included in "other clams".
5 Includes canned, nectar, chowder, fresh and frozen, and other butter clam products.
6 Includes horse clams.
7 Includes bait, horse clam body and neck meat, fresh and frozen, meat, and other clam products.
8 Includes a small amount of other crab products.
9 Includes frozen and other dogfish products.
10 Includes fresh/frozen dressed flounder and other flounder products.
11 Includes blocks and other Pacific cod products.
12 Includes small amount of frozen hake.
13 Includes halibut products derived from imported halibut.
14 Includes frozen fletches, blocks and other halibut products.
15 Includes herring spawn on kelp.
16 Includes mature and immature roe, some of which was derived from imported herring.
17 Includes fresh herring and sardines, animal feed, pickled, kippered snacks and other herring products.
18 Includes surimi and other ling cod products.
19 Includes I.Q.F. breaded, canned and other oyster products.
20 Includes fresh and frozen dressed and other Pacific Ocean Perch products.
21 Includes frozen, frozen fillets, surimi and other pollock products, some of which was derived from imported pollock.
22 Included in rockfish.
23 Includes other red snapper products.
24 Includes blocks and other rockfish products.
25 Includes a small amount of other sablefish products.
26 Includes salmon roe.
27 Includes salmon products derived from imported salmon.
28 Includes hot and cold smoked and specialty smoked products.
29 Includes specialty packs.
30 Includes "No. 1 Grade" and "other grades."
31 Includes offal, offal meal, oil, heads, bait, milts, animal feed and other salmon products.
32 Includes freshwater trout and Arctic char.
33 Includes canned and other farmed salmon products.
34 Includes sea cucumber products derived from imported sea cucumber.
35 Includes sea urchin products derived from imported sea urchins.
36 Includes bulk roe and other green sea urchin products.
37 Includes whole and other red sea urchin products.
38 Includes other shrimp products.
39 Includes other skate products.
40 Included in "other sole."

TABLE 35 - CONT'D - FOOTNOTES

41 Includes frozen round and other rock sole products.
42 Includes blocks and other sole products.
43 Includes frozen and other sturgeon products.
44 Does not include 35 tonnes worth $70,900 caught in U.S. and international waters and landed in Canada by Canadian fishermen.
45 Includes canned and other tuna products. Also includes tuna products derived from imported tuna (U.S. or International water origin).
46 Includes non food fish, idiotfish, plankton, shark, snails, squid, smelt, anchovies, crayfish, other fish and shellfish n.e.s.
47 Includes "other groundfish," "portions, sticks and specialty" products some of which may contain imported fish, "other shellfish," fish meal n.e.s., fish oil n.e.s., marine plants, plankton, squid, smelt, mussels, mackeral, animal feed n.e.s., "other fish" and solubles n.e.s.

III. LICENSING OF THE B.C. FISHING AND FISH PROCESSING SECTORS - 1989

The total number of personal commercial fishing licences issued by the Department of Fisheries and Oceans in 1989 decreased by 6 percent from 17,627 in 1988 to 16,484. Given the continued issuance of the 1 and 5-year licence, the overall change in numbers of licences issued may not actually reflect a change in the number of people licenced to fish - i.e. holders of 5-year licences only renew every five years. A total of 1,612 5-year licences, as well as 14,874 traditional 1-year licences were issued compared to 1,567 and 16,060 issued in 1988, respectively. It should be noted that 6,250 5-year licences issued in previous years were valid during 1989, bringing the total number of eligible fishermen to 21,124.

Overall the number of licences issued by the Department of Fisheries and Oceans for limited entry commercial fisheries remained relatively constant. All categories of limited entry licences displayed only minor fluctuations. There were, however, some significant increases in the number of unlimited entry (Z) fisheries licences issued. Virtually all showed increases over 1988, most noteably shrimp, sea urchins and sea cucumbers, however, goose barnacles showed a decline. This marked increase may well reflect a general perception of these licences becoming designated as limited entry. The Z licence (N) for rockfish by hook and line gear showed a continued increase in the number of licences issued. The Z (A) licence was reassigned in 1988 to green sea urchin and in 1989 showed a significant increase. In 1989, the Z-2 licence, previously designated for fishing for welks, was re-assigned to commercial clam harvesting, of which 1,870 were issued. Also, the Z-7 for fishing octopus without a vessel was phased out.

Each facility or operation in British Columbia, which processes or buys fish, is required to be licenced by the Ministry of Agriculture, Fisheries and Food. Decals are issued with the licence to specify the category of processing or buying which they may undertake. Therefore, each licence may have multiple decals associated with it.

The number of fish processing licences issued by the Ministry of Agriculture, Fisheries, and Food increased by 2 percent in 1989, from 248 to 253, including 7 for processing at sea. The number of processing licence decals issued rose slightly for most categories except for commercial salmon cannery, roe herring and small cold storage which declined slightly. A total of 2 marine plant processing licence decals were issued in 1989.

The number of fish buying licence decals issued to persons and/or companies increased in the salmon and roe herring category, but declined for finfish and invertebrates. A total of 580 licences were issued in 1989, compared to 494 in 1988, an increase of 6 percent. Specifically, the number of fish buying decals issued were: 318 for salmon, 235[1] for roe herring, 107 for other finfish and 85 for invertebrates. A total of 169 fisherman's vending licences were also issued in 1989, as compared to 149 in 1988. Finally, 238 oyster picking permits and 35 marine plant harvesting permits were issued by the Ministry of Agriculture, Fisheries and Food. A total of 287 tonnes of marine plants were harvested under permit.

1 With the introduction of a new calendar year based licence in January 1990, most of the roe herring buyers licences, traditionally issued in the fiscal year (1989-90) will be accounted for in the new calendar year. Only 26 roe herring buyers licences were issued prior to December 31, 1989, although the total number comparable to previous years is estimated to be 235.

TABLE 36 - PERSONAL COMMERCIAL FISHING LICENCES ISSUED BY THE DEPARTMENT OF FISHERIES AND OCEANS

BY DISTRICT 1987-1989[1]

	1987		1988		1989	
	1 Year	5 Year[2]	1 Year	5 Year[2]	1 Year	5 Year[2]
KAMLOOPS	8	-	15	-	24	-
NEW WESTMINSTER	2,355	310	2,282	346	2,428	498
NANAIMO	4,772	208	4,450	180	3,794	187
PORT ALBERNI	1,540	37	1,420	25	1,256	44
CAMPBELL RIVER	2,281	165	2,219	138	2,233	148
PRINCE RUPERT	2,115	374	2,233	203	1,975	174
VICTORIA	1,466	138	1,538	127	1,343	133
VANCOUVER	1,944	755	1,864	548	1,742	428
WHITEHORSE	74	-	39	-	79	-
TOTAL	16,555	1,987	16,060	1,567	14,874	1,612

1 Information provided by the Licensing Section, Department of Fisheries and Oceans, Pacific Region.

2 A total of 5,186 5-year licences were valid during 1987, 5,236 during 1988 and 6,250 during 1989.

TABLE 37 - COMMERCIAL FISHING LICENCES ISSUED BY THE DEPARTMENT OF FISHERIES AND OCEANS

BY FISHERY AND LICENCE CATEGORY 1987 - 1989[1]

FISHERY	LICENCE CATEGORY	1987	1988	1989
Salmon				
General	A	3,677	3,687	3,683
Seine	A	549	549	549
Temporary	B	2	2	1
N.N.F.C.[2]	N	253	253	254
Salmon Subtotal		4,481	4,491	4,487
Roe Herring				
Gillnet	H	1,327	1,327	1,327
Seine	H	252	252	252
Roe Herring Subtotal		1,579	1,579	1,579
Spawn on Kelp	J	28	28	28
Halibut	L	433	435	435
Groundfish Trawl	T	141	142	142
Shrimp Trawl	S	248	249	248
Sablefish	K	47	47	48
Abalone	E	26	26	26
Geoduck	G	55	55	55
Selected Species	C	1,069	1,084	1,085

1 Information provided by the Licensing Section, Department of Fisheries and Oceans, Pacific Region.
2 Northern Native Fishing Corporation exclusive licences.

TABLE 38 - COMMERCIAL FISHING LICENCES ISSUED BY THE DEPARTMENT OF FISHERIES AND OCEANS

SPECIAL FISHERIES (Z) - UNLIMITED ENTRY - 1987 -1989[1]

FISHERY	LICENCE CATEGORY	1987	1988	1989
Packing	D	187	182	219
Processor	P	10	11	16
Special Fisheries - Fishing with a Vessel Z				
Green Sea Urchin[2]	Z-A	-	89	191
Weathervane Scallops	Z-B	5	5	7
Red Sea Urchin	Z-C	184	184	240
Sea Cucumber	Z-D	151	160	245
Squid Species	Z-E	69	72	72
Euphausiid	Z-F	18	31	45
Copepod	Z-G	0	0	0
Shrimp	Z-H	698	677	901
Pink or Spiny Scallop	Z-I	29	34	43
Octopus	Z-J	167	188	257
Anchovy	Z-K	28	9	24
Surf and Pile Perch	Z-L	26	25	40
Herring other than Roe Herring	Z-M	25	18	23
Rockfishes	Z-N	1,935	2,105	2,319
Six-gill sharks	Z-O	17	35	29
Special Fisheries - Fishing Without a Vessel Z				
Mussel	Z-1	25	43	20
Clam[3]	Z-2	0	0	1,870
Winkles	Z-3	0	0	0
Top Snail	Z-4	0	0	0
Limpet	Z-5	0	0	0
Goose Barnacle	Z-6	221	467	130
Octopus[4]	Z-7	19	19	0
Smelt	Z-8	44	67	66
Eulachon	Z-9	2	5	3

1 Information provided by the Licencing Section, Department of Fisheries and Oceans, Pacific Region.
2 Licence category Z-A reassigned to Green Sea Urchin in 1988.
3 Licence category Z-2 reassigned to commercial clam harvesting in 1989.
4 Licence category Z-7 phased out in 1989.

TABLE 39 - FISH PROCESSING, FISH BUYING AND FISHERMEN'S VENDING LICENCES ISSUED BY THE MINISTRY OF AGRICULTURE, FISHERIES AND FOOD

BY LICENCE TYPE - 1987 - 1989[1]

	1987[2]	1988[2]	1989[3]
Processing Licence Decals			
Commercial Salmon Cannery	14	13[6]	11
Sport Caught Salmon Cannery	1[4]	-	-
Salmon	118	129	140
Roe Herring	37	35	34
Fin Fish	97	97	104
Invertebrates	116	129	129
Cold Storage:			
a. over 80 m^3	74	77	80
b. under 80 m^3	51	54	46
Marine Plants	4	3	2
Non-human consumption	7	9	11
Buyer Licence Decals			
Salmon	290	294	318
Roe Herring	185	209	26[7]
Fin Fish	132	116	107
Invertebrates	106	87	85
Fisherman's Vending Licences	181	149	169
Oyster Picking Permits	412	258	238
Marine Plant Harvesting Licences	52[5]	37[5]	35[5]

1 Fish processing and buying licences are assigned decals which indicate the category of processing or buying that may be conducted, as such, a licence may have multiple decals.

2 Covers fiscal year April 1 to March 31.

3 Beginning in January 1990, all licences issued changed to a calendar year basis.

4 In 1987 six companies were licenced to can sport-caught fish, five were already covered by commercial salmon cannery licences while the other was exclusively licenced as a sport-caught cannery.

5 Includes licences issued for salicornia industry development, 13 issued in 1987, 10 in 1988 and 10 in 1989.

6 In 1988, the Sport-Caught Salmon Cannery category was included in the category called Sport-Caught Fish Processing. There were nine companies licenced to process sport-caught fish in 1988, although only two were licenced exclusively for sport-caught fish processing.

7 Due to a change to a new calendar year based licence in January 1990, most of the roe herring buyers licences, traditionally issued in the fiscal year will be accounted for in the new calendar year. Only 26 licences were issued prior to December 31, 1989, although the total number comparable to past years is estimated to be 235.

TABLE 40 - DISTRIBUTION OF BRITISH COLUMBIA FISH PROCESSING FACILITIES BY GEOGRAPHIC REGION[1]
1988/89 - 1989/90

	1988/89[2]					1989/90[2]				
Region	Only Canning	Only[3] Cold Storage	Canning and Cold Storage	Plant Only	Total Plants	Only Canning	Only[3] Cold Storage	Canning and Cold Storage	Plant Only	Total Plants
Lower Mainland	2	56	4	32	94	2	65	3	37	107
Southern Vancouver Island	1	21	-	23	45	1	17	-	27	45
West Coast Vancouver Island	-	6	-	5	11	-	4	-	7	11
Northern Vancouver Island	1	13	1	23	38	1	14	1	25	41
Sunshine Coast	-	10	-	9	19	-	8	-	10	18
Central Coast	-	3	-	-	3	-	2	-	2	4
North Coast/Prince Rupert	-	4	4	3	11	-	4	3	3	10
Queen Charlotte Islands	-	2	-	1	3	-	1	-	1	2
Interior of B.C.	-	2	-	-	2	-	2	-	1	3
TOTAL	4	117	9	96	226	4	117	7	113	241

1 Does not include vessels that were licenced to process or companies that leased space in licenced facilities. Sports fish canning facilities are included.
2 Based on Province of British Columbia Fiscal Year (April 1 to March 31).
3 This category may include facilities in which fresh/frozen fish products were processed.

IV. EMPLOYMENT IN THE B.C. FISH PROCESSING SECTOR

For the first time in 1987, a survey of processing facilities was conducted to gather information on the average number of employees involved within the sector. Data was compiled by month and geographic region based on the number of employees on payroll on the last working day of each month or at the end of a specific processing activity (i.e. roe herring) that concludes mid-month.

Employment by month ranged from a low of 3,372 in January to a peak of 8,336 in August. The total average employment over the 1987 calendar year for all geographic regions was 5,539, with 61 percent of these employees being concentrated in the lower mainland area. The data is reprinted in this edition for reference.

A similar independent survey of the processing sector indicated that, in 1989, there were 5,700 direct man years of employment generated in the fish processing sector. (Source: The Economic Impacts of Fishing in British Columbia - 1988 - 1989, Price Waterhouse, May 1990).

TABLE 41 - REGIONAL EMPLOYMENT IN THE B.C. FISH PROCESSING SECTOR BY MONTH 1987[1]

	Lower Mainland	Vancouver Island	Central and Sunshine Coast	North Coast[2]	Total B.C.
JANUARY	2,136	592	87	557	3,372
FEBRUARY	2,184	652	99	685	3,620
MARCH	3,228	841	127	1,211	5,407
APRIL	3,732	835	133	1,382	6,082
MAY	3,692	895	113	1,247	5,947
JUNE	3,370	840	110	908	5,228
JULY	3,919	1,206	97	2,181	7,403
AUGUST	4,715	1,296	113	2,212	8,336
SEPTEMBER	3,817	1,123	128	1,386	6,454
OCTOBER	3,665	1,068	121	802	5,656
NOVEMBER	3,266	885	130	694	4,975
DECEMBER	2,512	814	102	558	3,986
TOTAL	40,236	11,047	1,360	13,823	66,466
AVERAGE	3,353	921	113	1,152	5,539

1 Includes executive, administrative and sales, processing/manufacturing operations and other related workers.

2 Includes persons involved in floating processing operations north of Cape Caution.

TABLE 42 - CANADIAN CONSUMER PRICE INDEX FOR ALL ITEMS AND SELECTED FOOD ITEMS FOR 1975 - 1989

(1986 = 100)

	ALL ITEMS	FISH	POULTRY	MEAT[1]
1975	44.2	37.9	50.2	n/a
1976	47.5	41.7	51.7	n/a
1977	51.3	46.0	51.9	n/a
1978	55.9	52.4	59.6	n/a
1979	61.0	58.3	67.5	70.5
1980	67.2	66.2	70.6	78.7
1981	75.5	75.8	82.0	80.7
1982	83.7	83.0	85.6	80.9
1983	88.5	87.1	88.4	84.7
1984	92.4	91.4	93.9	87.3
1985	96.0	95.2	92.6	91.7
1986	100.0	100.0	100.0	100.0
1987	104.4	111.2	105.5	109.0
1988	108.6	120.7	106.5	109.3
1989	114.0	124.5	116.7	111.9

Source: - Canada, Statistics Canada, Consumer Prices and Price Indexes, October - December, 1984. Ottawa: Supply and Services Canada, March 1985.
- Table 8: Consumer Price Index for Canada, All Items, 1973-1984, p. 24.
- Table 9: Consumer Price Index for Canada - Main Components, Sub-groups and Selected Items, pp. 25-26.
- Personal Communication, Statistics Canada, July 12, 1985.
- Personal Communication, Statistics Canada, Sept. 11, 1986.
- Personal " " " Dec. 22, 1987
- Personal " " " Feb. 28, 1989
- Personal " " " Nov. 14, 1989
- Personal " " " July 16, 1991

1 Excludes poultry - Revised from previous editions.

V. GLOSSARY OF TERMS AND IMPORTANT NOTES

Landings Data:

All commercial fish landings or catch data is provided by the Department of Fisheries and Oceans.

Standard Form or Landed Weight:

- Salmon - Troll and Handline are reported dressed weight head-on unless otherwise specified.
  - Seine and Gillnet are reported round weight.
- Halibut is reported dressed weight head-off.
- All other fish are reported as round weight.
- Round weight is the weight of the whole fish as it comes from the water before any treatment or dressing.

Landed Value:

Prior to 1984, salmon landed values published did not include bonus payments. Consequently, payments made to fishermen, particulary for net caught salmon, were under-reported. Since 1984, salmon landed value is defined as the initial payment to fishermen including any additional adjustments and bonuses.

One metric tonne, or 1000 kilograms (kg), equals 2,204.6 pounds (lb.).

Terms:

Over the side sales refers to cooperative fishing arrangements, or joint ventures, of Canadian fishermen delivering groundfish, usually hake, to foreign vessels.

Wholesale value represents gross sales based upon company invoices (F.O.B. processing plant) for fish products.

Net selling value refers to pricing information on canned salmon products and reflects the final selling price after promotions, case allowances, cash discounts and other trade discounts which may apply.

Wholesale price is the average price based on the total wholesale value divided by total quantity of that product. It reflects a true weighted average price of that product, incorporating price fluctuations over the calendar year.

Salted/Mild Cured Salmon includes salmon products prepared by either brining or dry salting for human consumption.

GLOSSARY OF TERMS AND IMPORTANT NOTES - continued

Cold smoked salmon includes all products which are both brined and cold smoked.

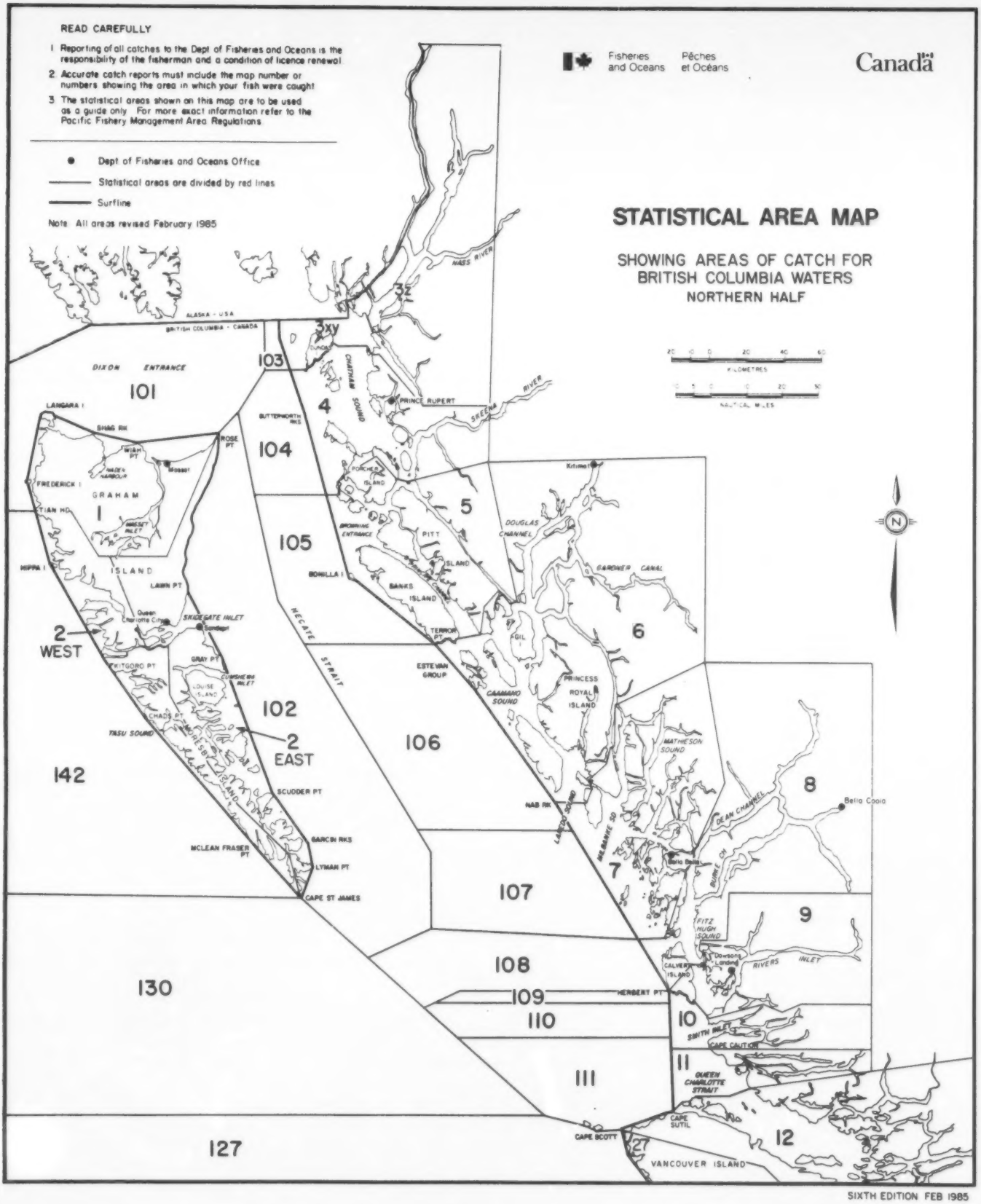
Hot Smoked Salmon includes products which are brined and hot smoked or cooked - may include barbequed products.

Specialty Smoked Salmon Products are specialty packed smoked salmon products or products which are derived from smoked salmon. These may include smoked salmon pate and butter as well as "other" products.

Portion Pack/Specialty Products include specially packaged salmon products such as individual portion and food service portion packs. These may include variety of packaging technologies.

N.E.S. refers to not elsewhere specified.

Farm Gate Price is the price received by the farmer/producer for the fish before processing.



SIXTH EDITION FEB 1985

READ CAREFULLY

1. Reporting of all catches to the Dept of Fisheries and Oceans is the responsibility of the fisherman and a condition of licence renewal
2. Accurate catch reports must include the map number or numbers showing the area in which your fish were caught
3. The statistical areas shown on this map are to be used as a guide only. For more exact information refer to the Pacific Fishery Management Area Regulations

● Dept of Fisheries and Oceans Office

——— Statistical areas are divided by red lines

——— Surfline

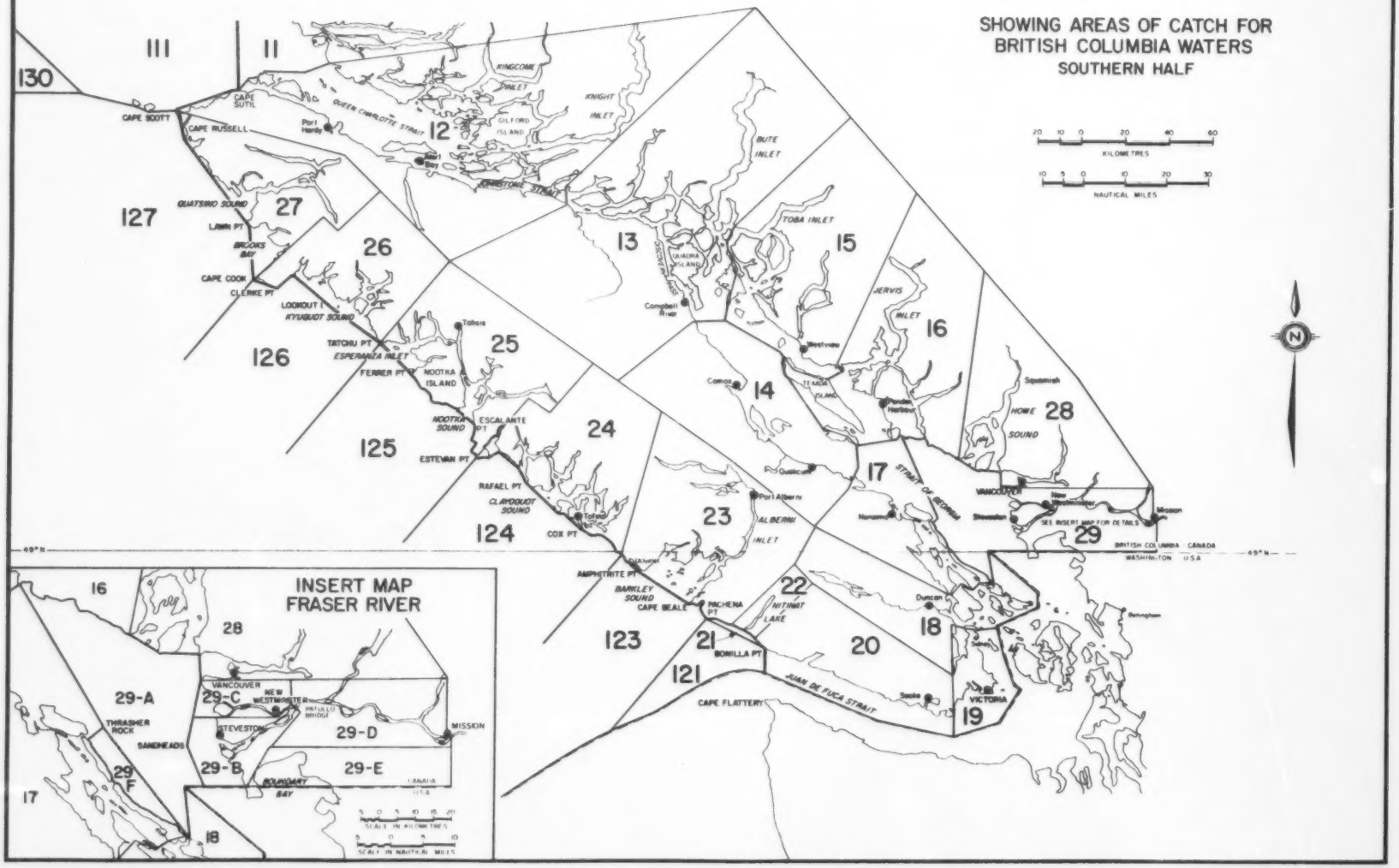
Note All areas revised February 1985

Fisheries and Oceans / Pêches et Océans

Canada

STATISTICAL AREA MAP

SHOWING AREAS OF CATCH FOR BRITISH COLUMBIA WATERS SOUTHERN HALF



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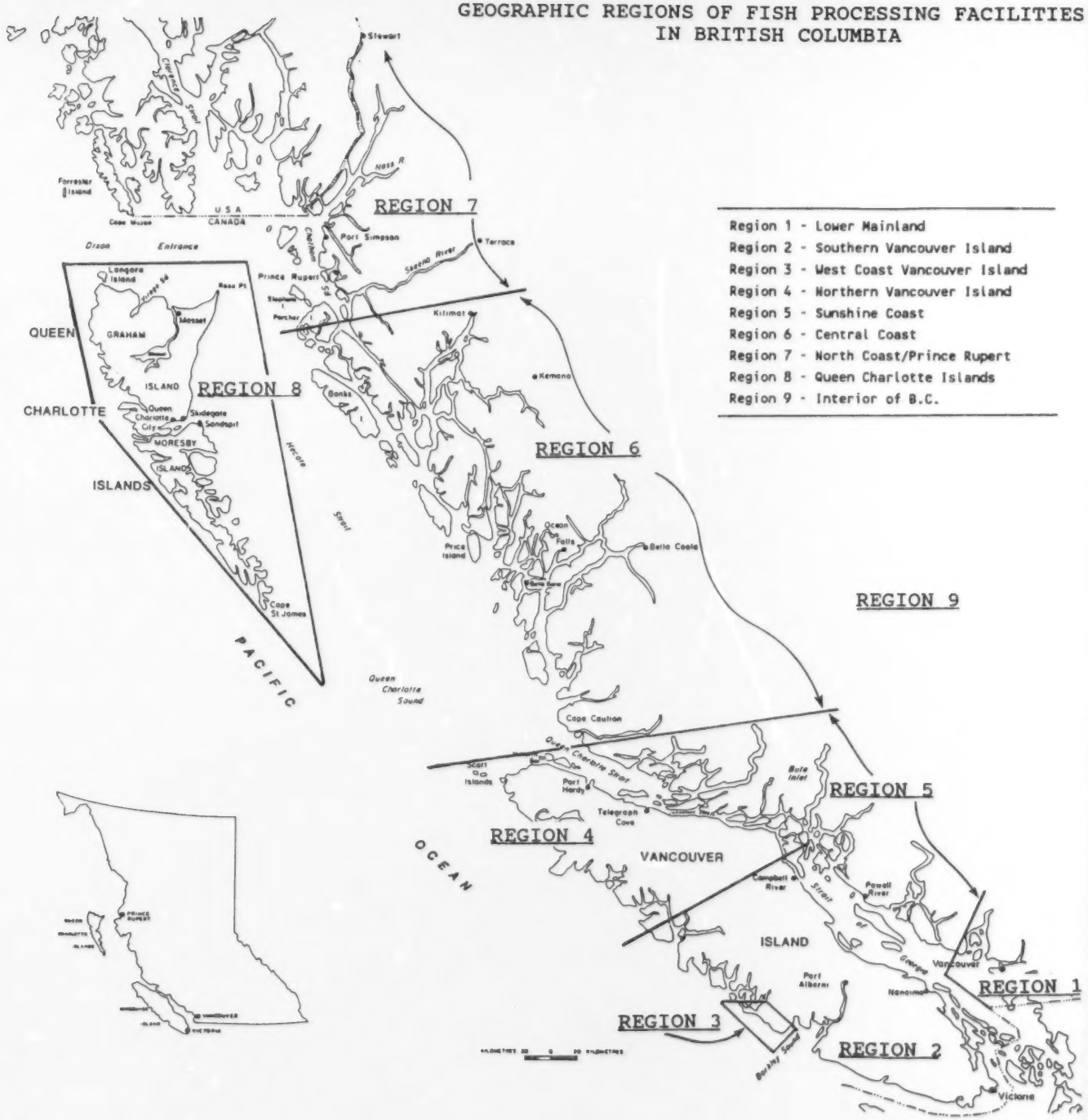
GEOGRAPHIC REGIONS OF FISH PROCESSING FACILITIES IN BRITISH COLUMBIA



Source: Commercial Fisheries Section, Aquaculture and Commercial Fisheries Branch, Ministry of Agriculture, Fisheries and Food